

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

The

Astrogram

AMES RESEARCH CENTER, MOFFETT FIELD, CALIFORNIA

VOLUME II

JULY 7, 1960

NUMBER 19

Ames Engineer Addresses NATO Panel In Paris



Seth B. Anderson, Ames Research Center engineer, presented a paper recently to the AGARD Flight Test Panel in Paris on an important phase of Ames research.

Mr. Anderson's paper is entitled "Handling Qualities Criteria for V/STOL Aircraft." The term V/STOL is used to designate airplanes capable of vertical take-off and landing (VTOL) or short take-off and landing (STOL). A research program on aircraft of the V/STOL type has been in progress at Ames for several years. Both wind tunnel and flight studies have been made, using a number of unconventional aircraft.

AGARD is a part of the North Atlantic Treaty Organization (NATO) and the letters stand for Advisory Group for Aeronautical Research and Development. AGARD is a forum through which NATO member nations exchange aeronautical research information.

Mr. Anderson has been associated with the NASA and its predecessor agency since 1941. His fields of research have included the handling qualities of aircraft in low speed and high speed flight, boundary layer devices, jet thrust reversers, low speed landing and approach pro-

TOM MARTINEZ AMONG HONORED FOOTHILL STUDENTS

An interesting postscript to last issue's story on the development of a \$50,000 videotape recorder by seven Foothill College students is that one of the honored students is Tom Martinez of Electrical Branch. Martinez, along with the other six students devoted two years to this unique project including numberless afternoons taken on annual leave to attend classes with the group.

After the project's successful completion he and the others received accolades from surprised Ampex Corporation engineers and proud Foothill officials. They were each introduced to the press and their accomplishment merited both local and national coverage. Tom's working knowledge of alternating and direct current theory gained at Ames gave him the tools to pursue this challenge. His adeptness at probing through complicated electrical circuits, as our Electrical Branch personnel are wont to do, was the other factor that stood him in good stead as the students had to develop their own circuit diagrams which were not supplied.

BLOOD MOBILE VISIT

The Santa Clara Valley Bloodmobile will visit Ames today, Thursday, July 7, from 9 a.m. until noon.

All Ames employees who wish to donate blood may sign up on the sheet provided for that purpose in each branch office or call Betty Brady, ext. 411 for an appointment time. As before, members of an employee's family may donate today also.

Blood on deposit at the Blood Center is available to all Ames personnel and their immediate families.

blems, and is the author or co-author of 20 NACA or NASA reports.

Harry J. Goett Receives Honorary Doctorate



Harry J. Goett, Director of the Goddard Space Flight Center, Washington, D.C., has been awarded the honorary degree of Doctor of Engineering for his Engineering accomplishments in aircraft and space flight, by the New Mexico State University of Agriculture, Engineering and Science. In presenting the honor, Robert B. Corbett, President of the University, referred to Mr. Goett as a recognized pioneer in space flight aerodynamics and an international authority in the solution of guidance and control problems of space vehicles and aircraft. For 25 years, President Corbett pointed out, Mr. Goett has provided outstanding contributions to his profession and services to the nation and the scientific community.

Mr. Goett was named Director of NASA's Goddard Space Flight Center September 6, 1959. Prior to his present assignment, he was Chief of the Full-Scale and Flight Research Division at the Ames Research Center, Moffett Field, California, where he spearheaded research into the problems of re-entry heating, stabilization and control of space vehicles and aircraft.

Astroventuring... ★ with Walt Krumm

How do we know!
Mass? Density?

The mass of a star can be determined only if the star is a member of a system of which the parallax and orbit are known.

$$M_1 + M_2 = A^3 / P^2$$

where M_1 and M_2 are the masses in terms of the Sun's mass, P is the period in years and A the semi-major axis of the system in astronomical units.

If we take the mass of the stars we can derive by this method and plot them against the luminosity of these stars we find there appears a mass-luminosity relationship. With this we can estimate the mass of other stars whose luminosities we know.

The stellar masses do not vary as widely as the other properties of a star - probably from ten times the mass of the sun to 1/10 that of the sun. Only a few stars are known whose mass is over 10 times that of the sun, and a star even 3 times the sun's mass is rare. The star of smallest mass known is 1/5 as massive as the sun.

When the mass and size of a star are known the density can be obtained easily by dividing mass by volume.

The densities of stars are known to have an amazingly wide range. The giant new red stars, such as Antares and Betelgeuse, are so rarified, they would be as tenuous as an artificial vacuum. The other extreme, the white dwarfs, are so heavy the material in them is thousands of times as heavy as lead. To illustrate the first - there are eclipsing binary stars in the sky where the smaller bright star can be seen through the larger primary star as it passes behind it in its orbit. From one ton to five tons per cubic inch have been estimated for the weight of the dwarf stars. These are stars where the atomic activity has slowed down - where the spacing between the nucleus and the electrons has been reduced - as a normal star explodes and collapses after a nova. There is recent evidence of a dwarf star exploding and further collapsing to result in a body where all the material is at a standstill - resulting in a star 1000 times as heavy per unit volume as a dwarf.

UNITARY'S "BIG FOUR" TEMPORARILY "BIG THREE"

Recently one of the four large electric motors used to drive Unitary's compressors suffered a breakdown. From the pen of Joe Auby, Electrical Branch, flowed the following tribute to a fallen comrade. He calls it

ODE TO NUMBER 4

Old Mighty Four does roar no more

Its rotor's gone to ground
It has left its buddies three to push

While it just runs around.

Five years of amps and volts
and watts

Have crushed old Might Four
It acts as a flywheel now
It cannot work no more.

The tunnel men that nursed you
Red Ragged each vital part.
With meggers they have shocked you
Their Hi Pot made you spark.

O Mighty Four, your brushes worn,
Your end bells dissassembled;
We'll not forget your record proud
Though dignity's now humbled--

Take on it's load you buddies three
And push and tug and heave!
The tunnel boys won't let four down
They'll get if off Sick Leave!

Ames Airings

Stevens Creek Park was the scene of a large barbecue for the STRUCTURAL FABRICATION SHOP Saturday, June 25, 1960. About 95 - 100 people attended and had a very enjoyable day. Among our proud grandparents are two more Ames employees--ELSIE BAXTER (Fiscal) has a new granddaughter, Karen Lynn, born May 24 and weighing 7 lbs, 10 ounces, and FRANK SCOTT (Struc. Fab.) welcomed his third grandchild, a baby boy weighing 8 lbs, 6 ounces. Joining the ranks of the newlyweds are DAVID H. HICKEY (40- by 80-) and his new bride, the former Patricia Ann Siegel. They were married on July 2, 1960 at the First Congregational Church of the Chimes in Van Nuys, California. They are honeymooning

Cafeteria Menu

WEEK OF JULY 11

Mon. Spaghetti and Meat Sauce, Tossed Salad or Vegetable, Hot French Roll, Ice Cream or Cake. 85¢
Split Pea Soup. 15¢

Tues. Roast Beef Au Jus, Whipped Potatoes, String Beans, Ice Cream or Fruit. 90¢
Tomato Macaroni. 15¢

Wed. Grilled Pork Chops, Parsleyed Potatoes, Spiced Beet Salad or Creamed Corn, Ice Cream or Rice Pudding. 90¢
Cream of Celery. 15¢

Thurs. Chicken Fried Steak, Mashed Potatoes, Cream Gravy, Sugar Peas, Ice Cream. 95¢
Cream of Tomato Soup. 15¢

Fri. Fried Prawns, French Fries, Cole Slaw or Vegetable, Hot Sauce, Ice Cream or Jello. 90¢
Clam Chowder. 15¢
SPECIAL--Meat Entree
Steak Sandwich and Salad. 55¢
Cold Plate Luncheon. 65¢
Hamburger. 30¢

WEEK OF JULY 18

Mon. Ham Steak, Pineapple Ring, Candied Yams, Spinach, Ice Cream or Baked Apple. 90¢
Vegetable Soup. 15¢

Tues. Stuffed Bell Pepper, Buttered Carrots, Scalloped Potatoes, Ice Cream or Cherry Cobbler. 90¢
Bean Soup. 15¢

Wed. Chuck Meat Loaf, Snowflake Potatoes, Cottage Cheese and Fruit Salad or Vegetable, Ice Cream or Fresh Peaches. 90¢
Cream of Tomato Soup. 15¢

Thurs. Swiss Steak, Whipped Potatoes, String Beans, Ice Cream or Bread Pudding. 95¢
Split Pea Soup. 15¢

Fri. Fried Scallops, Shoestring Potatoes, Cole Slaw, Tartar Sauce, Ice Cream or Jello. 90¢
Clam Chowder. 15¢
SPECIAL--Meat Entree
Steak Sandwich and Salad. 55¢
Cold Plate Luncheon. 65¢
Hamburger. 30¢

Complete Luncheon Includes
BREAD & BUTTER and TEA or COFFEE

in Santa Barbara and Carmel. Four new fathers are members of the "midnight strollers" club. ROGER CRAIG (SSFF) has a new addition to his family by the name of Lorelei, born June 15, weighing 7 lbs, 1/2 ounce---Kippen Diane arrived at the home of TOM GREGORY (9x7) on June 14, 1960. She weighed in at 9 lbs, 6 ounces---A baby boy made his debut at the home of ANGELO MARGOZZI (FIR) on June 17. Paul David weighed 6 lbs, 13 ounces---ANGELO GIOVANNETTI (Constr. Eng.) and family welcomed a baby boy, Dean, on June 18, weighing 6 lbs, 8 ounces. Recently returned from visiting relatives in Oklahoma, Texas, New Mexico and Los Angeles is MAXINE BROWN (Struc. Dynamics) and her husband. OTTO MECKLER (Struc. Fab.) and family spent the weekend of June 25th at Whispering Pines. They enjoyed golfing and resting.

Ames Closeup



RUSSELL HISERMAN

Russell L. Hiserman, Jr., ("R. L." to his fellow workers) Assistant Chief of Photographic Branch, Acting Head of the General Photography Section, could be labeled with still another title-- "The Roving Cameraman." Hiserman and his wife, Ruthie, yearly make motor trips through the scenic sections of the country and have reel upon reel of recorded memories of the sights and wonders they have seen. No amateur efforts these, for he can now call on more than thirty years' experience in movie making, starting when he was a free lance news-reel photographer in his home state of Virginia.

Hiserman's father, who operated a portrait studio in Waynesboro, Virginia, may have influenced his choice of vocations. After working in his father's studio after school and on Saturdays learning the techniques of photography, he went to work for the Du Pont Corporation as a photomicroscopist. In his spare time he searched for news and sold footage to the Universal Newsreel Co. during the years 1929-30-31.

Hiserman worked at the Du Pont acetate film base plant until the war came. He applied for a Civil Service position in photography at his local Civil Service board and soon after received a telegram from Ames requesting his services. He arrived here in August of 1943.

California climate agrees with the Hiserman family and they enjoy working together on outdoor projects in the yard and patio.

Architectural drafting done

during the depression has aided him in designing and building three homes in this area. The first, built in 1950 for \$9,000 is a Cape Cod home which he later sold for \$21,500. Betty, his daughter, and her husband and two children received his help in building their home, and in 1956 he designed what he calls a Cape Cod ranch house. He blended the good features of each style into a pleasingly designed home in which they live today at 330 El Monte in Los Altos. Ruthie presided over the interior decoration of their home.

He has designed and built three boats and a travel trailer. His current traveling outfit includes a 12-foot car top boat which he has rigged so that he can load and unload it singlehandedly, and a 19 foot commercially built trailer dubbed "Road Runner." Together with his 16 mm movie camera this outfit provides Ruthie and R. L. with all the comforts of home plus a few not found at home--such as being parked beside a still lake at sunset where he can drop his line for an entree of fresh lake fish.

Every other year they make a transcontinental tour which includes most of the states and Canada, fishing, water skiing and capturing the enjoyable sights on film. Once in Canada they were in danger of being captured themselves--not on film but by traffic authorities. The non-French speaking Hisermans, wishing to park their trailer and make a tour of Quebec, sought a quiet street near the Frontenac hotel for this purpose. They found the street, but as they neared the hotel it appeared as

WANT ADS

For Sale--1949 Cadillac, new tires, r and h \$250. Call AN 9-1477.

For Rent--One room with board available. Women only. Call Hatfield, DA 1-5221.

Wanted--Girls 24-inch, light weight bicycle. Call Bob Peters, ext. 329 or EL 4-2428.

For Rent--Room for girl in private home. Board available. Location: South Palo Alto near Middlefield Road. Call DA 1-5221.

For Sale--Sub-zero freezer, 12 cubic feet. Take over payments. Ironite Ironer in cherry cabinet. Miscellaneous furniture. Call Resnikoff, ext. 208 or CH 8-1060.

For Rent--Rio Del Mar beach house, 3 bedroom, 2 baths, choice location, ocean view, \$85 per week. Call ext. 210 or UN 7-3335.

For Sale--or Trade frogman fins for size 9 or 10 foot. Original cost \$12. Call Tom Snouse, AX 6-0188.

Wanted to Rent--3 bedroom, 2 bath house on quiet street in Los Altos for adults. Sept. 1. Call Vernon Rogallo, ext. 293.

Interested--in organizing a ride group from vicinity of Lawrence Station Road and Stevens Creek Road in Santa Clara. 8 to 4:30 shift. Call Bob Nysmith, ext. 424.

For Sale--5 tires size 6.40-15. 4 tires almost new and one spare - \$35. Call Frank Centolanz, ext. 202.

Interested--in organizing a ride group from Embarcadero and Greer Road in Palo Alto 8 - 4:30 shift. Call Bill Wehrend, ext. 216.

For Sale--8mm projector. List for \$150, will sell for \$65. Call R. J. Freeman, ext. 247.

For Rent--One room with private entrance. Board available. Located 461 Dana Street, Mountain View, close to town. Call Mrs. Lashmett, YO 7-3418.

though it led into a narrow archway and a group of buildings. After finally turning the car and trailer around, they discovered that all the traffic was heading toward them. It was a one-way street! Luckily a priest who spoke a little English saw their predicament and directed them to the highway before any mishaps occurred.

Their travel plans for the future include a trip through Mexico and maybe up to Alaska. However, the Mexico trip will be as members of a group, at least one of whom will speak fluent Spanish!

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Editor: B. P. Wilson

Reporters: NASA Employees.

bar-b-Q

August 13, 1960 - Saturday 10 a.m. - 10 p.m.

Bar B Q Time 1 p.m. - 4 p.m.

Blackberry Farm, Monta Vista - "Sycamore Grove"

MENU

Adults: 12 oz. Steak, Fresh Golden Corn, Tossed Green Salad, French Bread, Ice Cream and Coffee.

or

1/2 Bar B Q Chicken and same extras.

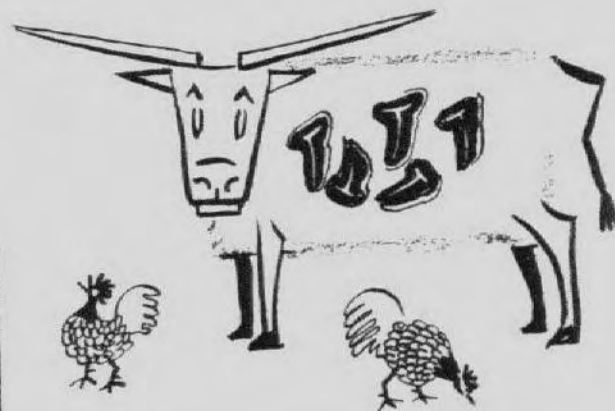
Children: Hamburgers, Corn, Salad, Milk and Ice Cream.
(6 - 12)

Children: Admission Free, Eats a la Carte.
(Under 6)

PROGRAM

Children's Games	12 - 1 p.m.
Adult Games	2:30 - 3:30 p.m.
Bar B Q Queen Contest	4 p.m.
Dancing and Bingo	5 p.m.

Call Bob George at ext. 224 for suggestions on group games and nominations for Bar B Q Queen.



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Dr. Victory Honored at Dinner



The occasion of Dr. John F. Victory's retirement after more than half a century of service was observed at a dinner in his honor Thursday evening, July 7.

Close to 120 long time friends and associates of Dr. Victory gathered in the Rose Room at Rickey's in Palo Alto to pay tribute to the man who was the first NACA employee and currently is Assistant to the Administrator. Guests of honor and close friends of Dr. Victory included Mr. and Mrs. Harold W. Squires of Sonoma, Mr. and Mrs. Russell E. Pettit of San Jose and Admiral S. B. Dunlap of Pennsylvania. Accompanying Dr. Victory on his visit to Ames were his wife, Marie, his daughter, Elizabeth, and two sisters.

Dr. Smith J. DeFrance, Director, acted as toastmaster at the dinner during which Harry J. Allen presented Dr. Victory a replica of a blunt nose re-entry vehicle, a humorous puppet show in the form of a news conference was presented by Harry DeVoto, a photograph album containing highlights of previous visits to Ames by Dr. Victory was presented by Dr. DeFrance, and George

JAMES V. KELLEY DINNER SCHEDULED

A dinner for James V. Kelley, Chief of Mechanical Instrument Branch will be held this evening (Thursday, July 21) at L'Omellette to celebrate the event of his retirement after completing more than 36 years service. Dinner will be informal and friends, wife and/or husbands of Center personnel are most welcome.

EL MONTE CAMPUS GROUNDBREAKING HELD

Foothill College broke ground for its new El Monte campus in a brief ceremony on the site Friday morning, July 1. The \$1.4 million campus will be built on 122 acres on El Monte and Purissima Avenues in Los Altos Hills.

Witnessing the historic event were members of the college citizens committees, area mayors and other city officials, school superintendents, principals and other officials, and members of the college faculty and students. The ceremony began at 11 a.m. with a preface and introductions by President Calvin C. Flint.

The construction contract for the first project was awarded on June 24 and totaled \$1,426,405. Project One is scheduled for completion on August 15, 1961, and the total campus is scheduled for completion during the academic year 1961-62.

Cooper presented Dr. Victory with a box of his choice apricots.

Dr. Victory is currently visiting all NASA installations before his retirement at the end of this month and left for Lewis Research Center at the end of his visit here. A final dinner will be held for him by NASA Headquarters in Washington July 27 at which a remembrance from the entire NASA organization will be presented.

NASA's Newest Center Officially Begins Operations

NASA's newest and largest field center, the George C. Marshall Space Flight Center, officially began operations July 1.

All of the Marshall Center's rocket development facilities and most of the personnel were transferred to NASA from the U. S. Army under provisions of a Presidential decision announced last October.

The Marshall Center is in charge of developing and launching NASA's space vehicles, and conducting related scientific research. The major current project is the huge Saturn space vehicle.

The new facility opened for business with approximately 4,900 employees, most of whom were former members of the Development Operations Division of the Army Ballistic Missile Agency. That division was directed by Dr. Wernher von Braun, who has become the head of the Marshall Center.

The new Center represents an investment of about one hundred million dollars. It is the only self-contained organization in the nation which is capable of conducting the development of a large space vehicle from the conception of the idea, through production of hardware, testing and launching operations.

The facilities were named in honor of the late General of the Army, George C. Marshall, by proclamation of President Eisenhower on March 15, 1960.

In addition to Saturn, Marshall will direct NASA's development of the Centaur and Agena-B high energy rockets, and the F-1 single chamber liquid motor which will develop 1,500,000 pounds of thrust.

Astroventuring...

★ with wait krumm

THE MILKY WAY GALAXY

As we watch the sky over a period of time we notice that some of the stars appear to change in brightness. These are called the

Variable Stars

The variable stars are so-called because they change in magnitude (brightness) with time in many ways and for many reasons. If we hold all factors constant except time, we can classify the variables according to short or long-period variables. This means that the stars vary in brightness from dim to bright to dim in a short period of time (hours or a few days) or over a longer period (months or even years). We can even subclass these into regular or irregular variables of the two types. If we hold all factors constant except magnitude, we can group the variables to those that vary only a partial magnitude and those that vary over many magnitudes. Or we can classify the variables to type by the physical change in the star. The astronomer uses these factors separately and in combination to group the variable stars into the present acceptable classifications.

The Cepheid variables are probably the most important type of variable star we have. These are stars that pulsate (expand and contract) and change magnitude because they present more surface to radiate light at times than others. Many of these Cepheid stars pulsate so regularly that a definite correlation can be theorized between the period, brightness, distance, etc., as we mentioned in the article on "how do we know? distance." Delta Cephei, from which this type gets its name varies from 3.6 to 4.4 magnitude with clock-work regularity in a period of 5.37 days. This type variable is characterized by short period, small change in magnitude and most regular periods.

The long period variables are an extension of the Cepheid's. These stars also pulsate but more slowly, with a period of 2 or 3 months to years and great magnitude changes of from 1 to 10. Mira, the Wonderful Star, or omicron Ceti, that lends its name to this class is truly amazing. It brightens from a low of 9th or 10th

magnitude to about magnitude 3 in approximately 11 months. This star is visible at times with the naked eye and then drops below the 6th magnitude to necessitate telescopic aid to see it. This class is characterized by long periods, large changes in magnitude, and not so regular periods.

The eclipsing variables comprise another important class. These are the double stars which change in magnitude because one passes across the other as they revolve about each other in their orbit, as we mentioned in the article on double stars. Algol, the Demon Star, in Perseus lends its name to this class and is very famous. The light of Algol dims down and up in five hours from the normal 2.2 magnitude to 3.4 magnitude every 69 hours. In this specific case the companion star to Algol is a dead star and we cannot see it except when it passes in front of the primary. The eclipse is also partial so that Algol itself does not dim out completely. There are many subtypes of eclipsing variables.

The nova are variable stars because they explode and increase their magnitude temporarily then decline to the normal or below. The word nova is given to this class as it means "new" and because most nova explode from below the naked-eye visibility to appear as a new bright star in a constellation. The brightness of these stars increases in the order of thousands of times in a short period of time, then they decline more or less slowly to their normal. The most recent nova of outstanding performance was Nova Aquila in 1918. It arose from an inconspicuous 11th magnitude star on July 6th to 6th magnitude and could be seen by naked eye on July 7th, then to 1.5 magnitude for a few hours on July 9/10th when it outshone all other stars in the sky. But its glory was short-lived for it dimmed to 4th magnitude by the end of the month and more slowly to its original magnitude of 11 in 1924. Nova (supernova, anyway) are few and far between. It is estimated that we have one a century and a few others that are less conspicuous. We do find them in other galaxies where we can resolve these "island universes" into separate stars, but even these nova are a rarity.

Then come the irregular variables that have varieties too numerous to mention but definitely are the most interesting. Could be, we'll talk about some of these

ANNUAL BARBECUE PRICES ANNOUNCED

Prices for the Annual Barbecue to be held Saturday, August 13 at the Blackberry Farm, Mont Vista have been announced by Hy Zimmer of the Ames Entertainment Committee. The prices, which include admission, use of the facilities and dinner, are as follows:

Adults: Steak dinner \$2.50

Chicken dinner \$1.75

Children: Steerburgers \$1.00

Guest Chefs already signed up include Bob Crane, Glen Goodwin, Andre Buck, Horace Miller, Fred Hansen, Tom Canning and George Edwards. More are needed to insure adequate supervision of the pit crew. (Barbecue, that is!)

A diversion planned for those who enjoy throwing a little weight around will be in the form of a horse-shoe tournament. Prizes will be awarded. Interested persons are invited to contact Bob George, Ext. 224 for details and to sign up. Deadline is July 27.

Branches wishing to reserve a section of tables can do so by calling Irving Israel at Ext. 224. Signs will be placed at the sections for identifying purposes.

Free samples of barbecued steak will be served in all branches Tuesday, August 2 and Wednesday, August 3 by Mr. Zimmer and committee members. When the aroma of steak reaches you on one of those days, get ready for a treat, because the serving cart won't be far behind!

individually in later issues if time permits.

To the amateur astronomer the variable stars present a challenge. A trained eye can estimate the magnitude of a star to a 10th and with moderate electronic equipment (the photo electric photometer) the amateur can divide magnitudes to 100th parts. With systematic viewing he can assist the professional astronomer in the ever expanding need for data on the variable stars. The variable stars are so numerous that the professional astronomer actually relies on the amateur for patrol in this field of endeavor. The American Association of Variable Star Observers is a group of amateurs that combine their efforts and send in data to a central station for compilation.

Lastly, a great number of the visible nova have been discovered by the amateur for he knows the sky and recognizes a "new star" as it appears in a constellation among the countless visible stars.

Ames Closeups



BARBARA SHORT

No, the glamorous looking young woman pictured above is not an engineer's secretary looking with wonder at her boss' slide rule--it belongs to her; she can use it as well as any man; she is a graduate of the University of California with a degree in Mechanical Engineering.

Barbara Short of Supersonic Free Flight Branch, although a rarity among professional engineers because she is a woman, has encountered little trouble in establishing herself as an equal among the research personnel here at Ames.

Born in Wray, Colorado, she moved with her family to the San Jose area at the age of 14. While attending San Jose High School she became interested in airplanes and took an aeronautics theory course that confirmed her engineering interests and led her to pursue mechanical engineering at Cal. During the summer vacation between her Junior and Senior years she was employed at Ames as a computer, working with Doris Jones (Mrs. R. T. Jones) in the old High Speed Research Division.

After graduation she was offered a permanent position at Ames and worked with Clarence Syvertson for a time before being assigned to SSFF in 1951. She has worked on nozzle design, dynamic stability, heat transfer and other current areas of research since then.

Her leisure activities include bridge, bowling, travel and sports. The trophies seen in the background above are the results of her winning ways on the local alleys. She has won high game, high series and numerous team trophies in the Ames Bowling



Dr. Smith J. DeFrance celebrated his 40th anniversary of government service (38 years with NACA-NASA) at a luncheon held Wednesday, July 13, in the private dining room. Approximately 25 members of the staff attended the luncheon, including former Ames Chief Test Pilot William H. McAvoy who was visiting the Center on that day.

CHILEAN RELIEF DRIVE HIGHLY SUCCESSFUL

The recent Ames Chilean Relief Drive exceeded all expectations as more than 90% of the Center's employees contributed during the three day collection by branch representatives. Several branches participated 100% in the drive and many others were close to that figure. Results of the emergency drive clearly indicate the extent of concern felt by Ames employees for the disaster victims in that unfortunate country.

A check for the amount collected and earmarked for Chile relief was presented to Nathan C. Finch, Chairman of the Palo Alto Area Chapter, American Red Cross in behalf of Ames employees.

A letter of appreciation was received by Dr. DeFrance from the local chapter in which Finch extended thanks to participating employees for their very generous contribution which gave a terrific boost to the local fund.

League.

Travel holds a special interest for her which began during numerous motor trips across the country when she was growing up. Turquoise Indian jewelry of the southwest states has always attracted her, and she has a large collection of finely wrought pieces. Barbara's foreign travel has included a NACA package tour of Europe in 1957 and more recently a Hawaiian vacation last year.

Barbara wouldn't trade places with anyone--she has full acceptance as to her professional ability, likes her work, and above all, meets such interesting people!

Health Insurance Plans Prove Worth

At least a dozen Ames families have already received benefits from the health insurance plans in which they enrolled recently. First to use his new plan was Kenneth Smith (Mach.), only two hours after the insurance went into effect. At 2 a.m. Sunday, July 10, Smith had to rush his son to the hospital because of a stomach ailment. Other Ames employees and their families have received benefits for medicines, X-rays, maternity and other medical care.

These plans offer a breadth of protection which few private employers now equal. The government pays about 46 percent of the program's cost, and participation can be continued after an employee retires from active service. These two facts alone enhance the attractiveness of Federal employment. For the more than 1200 Ames employees who enrolled in one of the plans a relationship now exists in which medical advice is sought before disability compels it, perhaps before it is too late to be of help, and in which the doctor can make a fair charge for his services and feel confident that his bill will be paid.

Even though all of the identification cards for the various plans have not been received, hospitals in the area have been notified and no families from Ames have found difficulty in being admitted for treatment. Identification cards are expected by the end of this month and will be distributed as soon as they arrive here.

Ames Airings

..... by
Sharon Scharmen

It's really nice to see JACK PARSONS back at work again after his recuperation from an operation several weeks ago. Hope you are feeling much better, Jack. FRIEDA SELLERS (Fiscal) recently returned from spending one week visiting Disneyland in Southern California and Old Mexico. Visiting with relatives for three weeks is BILL FOGLEMAN (Struc. Fab.) and family. They left July 14th for North Carolina. Our editor, BRAD WILSON, his wife and son spent the week of July 4th in Ukiah enjoying swimming and relaxing in warm sunshine. It's mid-night feeding time for ED WASSON (UPWT) and his wife Dae, who welcomed a baby boy, James Richard into their home on May 29, 1960. James weighed 5 lbs, 15 ounces. LOUISE BAKER (Fiscal) and her husband, spent two weeks vacation in June at Lake Tahoe and Los Angeles. Walking the floor these nights is DAVID KOENIG (40- by 80-) and his wife JEANNE KOENIG (formerly of 40- by 80-) with their new heir Steven David. He was born July 3, 1960 and weighed 8 lbs, 12 1/2 ounces. Spending weekends at Santa Cruz this summer are BEN LOCKS (Struc. Fab.) and family. He recently purchased a new trailer, which he is keeping there for their weekend visits. GEORGE FALKENTHAL (Elec.) and his wife Eileen are both doing just fine after the birth of their baby boy Gregory Richard, born on July 3, 1960. Gregory weighed in at 9 lbs and 1 ounce and is 21 inches long. HY ZIMMER (DA) and his wife visited Dardanelle on the Sonora Pass highway the week of July 4th. They enjoyed fishing in the Stanislaus River and taking pictures of the beautiful scenery. By the way, Hy, everyone who attended the Ice Follies would like to thank you for obtaining the tickets and for the excellent seats. The show was really wonderful. JAKE SMITH (Airc. Inspec.) his wife Helen and their six children, piled into the Smith's 9 passenger station wagon on June 10 and departed for Brewton, Alabama, Jake's home town. On the way to Alabama they visited the Grand Canyon Region, taking many snapshots there. After arriving in Brewton, they spent about a week and a half getting reacquainted with friends and

Cafeteria Menu

WEEK OF JULY 25

Mon. Short Ribs of Beef, Horseradish, Potato Pancakes or Steamed Rice, Stewed Tomatoes, Ice Cream or Fruit Cocktail...95¢
Vegetable Soup.....15¢

Tues. Chuck Meat Loaf and Cheese Sauce, Whipped Potatoes, Spinach, Ice Cream or Apple Cobbler.....90¢
Potato Soup Ala Jackson.....15¢

Wed. Beef Stew and Fresh Vegetables, Mashed Potatoes, Ice Cream or Peaches...95¢
Split Pea Soup.....15¢

Thurs. Steamed Weiners, Boston Baked Beans Dinner Salad, Ice Cream or Baked Apple...90¢
Navy Bean Soup.....15¢

Fri. Grilled Halibut, Tartar Sauce, Potatoes Au Gratin, Cole Slaw, Ice Cream or Jello.....90¢
Boston Clam Chowder.....15¢
SPECIAL--Meat Entree
Hamburger.....30¢
Steak Sandwich.....55¢
Cold Plate.....65¢

WEEK OF AUGUST 1

Mon. Ground Chuck Steak, Fried Onions, Snowflake Potatoes, Cottage Cheese and Fruit Salad, Ice Cream or Pudding...90¢
Bean Soup.....15¢

Tues. Beef Ravioli, Italian Meat Sauce, Tossed Green Salad, Ice Cream or Cobbler...85¢
Vegetable Soup.....15¢

Wed. Chicken Fried Steak, Onions, Scallop Potatoes, Green Beans, Ice Cream or Peaches.....95¢
Cream of Mushroom Soup.....15¢

Thurs. Choice Pot Roast of Beef, Noodles, Sugared Peas, Ice Cream or Jello.....95¢
Split Pea Soup.....15¢

Fri. Assorted Fish Plate, French Fries, Tartar Sauce, Cole Slaw, Ice Cream or Fruit Cocktail.....90¢
Clam Chowder.....15¢
SPECIAL--Meat Entree
Hamburger.....30¢
Steak Sandwich.....55¢
Cold Plate.....65¢

Complete Luncheon Includes
BREAD & BUTTER, TEA or COFFEE

AMES MAIL BOXES NOW TOTAL SIX

Forget to mail your wife's letter this morning on the way to work? Ames has six boxes conveniently located throughout the Center. Whether you are near the box at the west entrance of the Technical Services Building, the one at the west entrance of the 6- by 6- or the box located by the main entrance of Instrumentation

relatives not seen for sixteen years in some cases. They returned via the southern route visiting New Orleans, Texas, Carlsbad Caverns, Juarez and Disneyland, arriving home July 5th. We would like to welcome the Western Operations Office in Santa Monica to our newspaper group as they launched their first edition June 30, 1960. They have not selected a name for the paper as yet.

WANT ADS

Wanted--Establish or join ride group from Cambrian Park area, San Jose; 7:30 to 4:00 shift. Contact Bob Boese, ext. 293 or AN 4-4764.

For Sale--German Shepherd puppies, born June 10, 1960. AKC registered. \$45 females, \$55 males. Call Marvin Kussoy, ext. 353, or FI 1-4197 after 5:15 p.m.

Wanted--Ride from vicinity of South 6th and Williams Street in San Jose at 8:00 to 4:30 shift or will accept 7:30 to 4:00. Call John Luzzardi, NAS Moffett Field, YO 7-6961, ext. 256.

For Sale--Test trailer, butane, sleeps 4. \$125 or best offer. Call Bill Evans, ext. 244.

For Sale--By owner, 2 bedroom, 1 1/2 baths, close to bus, Valley Fair. Call F. B. Fuller, CH 3-0726.

For Rent--Available August 1, apartment, 1 bedroom, unfurnished; clean, modern. \$74.50. Call Jedlicka, ext. 419.

For Rent--Spacious apartment, \$90 per month, 2 bedroom, unfurnished, fireplace, carport, 220 wiring, adults only. Located in Santa Clara. Call Andrews 4-4818.

Ride Wanted--From Mardell Manor in Mountain View. Shift from 8:00 to 4:30. Call Helen Wong, ext. 338.

For Sale--Refrigerator/Freezer; 13 cu. feet, automatic defroster. Dishwasher, Hotpoint, mobile or built-in. Automatic washer, Maytag. All in excellent condition. Call Laurmann, ext. 266 or YO 8-2065.

For Sale--Electric train - "American Flyer", engine and 4 cars. Trestle, cattle loader, depot, round house, tower, railroad crossing, signal, mail loader and more. \$50.00. Call J. Rokovich RE 9-6054.

For Sale--Light meter, Western Master 3. \$10. Call R. J. Freeman, ext. 247.

For Sale--14' fiberglass runabout, w/10 hp Merc and trailer. Complete \$400. Call RE 6-7648.

Wanted--Ride from vicinity of County Hospital, San Jose, 8:00 to 4:30 shift. Call Maxine Jordan, ext. 235.

Research Lab, take the opportunity to deposit those Country Club dues

If you find yourself passing by the box located south of the west entrance of the new addition to Flight Operations Lab, or the one just east of the north entrance of the Administration building or by the box between the new Physics building and the 3.5-foot offices, here's the chance to mail that Auto Insurance premium you have been meaning to send for the past week.

Mail is collected every work day at 10:30 a.m. and 3:30 p.m.

The ASTROGRAM, an official publication of the Ames Research Center, NASA, Moffett Field, Calif., is published bi-weekly in the interest of Ames employees. Send contributions to The ASTROGRAM -- phone 385. Deadline: Thursday between publication dates.

Editor: B. P. Wilson

Reporters: NASA Employees.

The Astrogram

AMES RESEARCH CENTER, MOFFETT FIELD, CALIFORNIA

VOLUME II

AUGUST 4, 1960

NUMBER 21

Seamans Succeeds Horner as Associate Administrator

Robert C. Seamans, Jr., 41, chief engineer of the Missile Electronics and Controls Division of the Radio Corporation of America, has been named Associate Administrator of the NASA, effective September 1, it was announced recently by T. Keith Glennan, NASA Administrator.

At the federal space agency, Dr. Seamans will occupy the top career post, serving under the presidentially-appointed Administrator and Deputy Administrator. He succeeds Richard E. Horner, who resigned earlier this month to become senior vice president, technical, at Northrop, Inc.

"Mr. Horner has brought inspiration, leadership and great personal devotion and ability to the task of developing a management organization within NASA," Dr. Glennan said in making the announcement. "And I am very grateful for his willingness to stay on this vital job beyond the period originally agreed upon. I count it a great piece of good fortune that we have been able to secure the services of Dr. Seamans—a man of proven ability in the fields of science, technology and engineering management so vital to NASA—to provide a continuing high order of leadership for our operating organization."

A graduate of Harvard University, and the possessor of master's and doctor's degrees from the Massachusetts Institute of Technology, Dr. Seamans has been active since 1941 in the fields of missiles and aeronautics. From 1941 to 1955, he held teaching and project-management positions of increasing responsibility at M.I.T., including from 1949 to '55, associate professor of the Department of Aeronautical Engineering; from 1950 to '55, chief engineer of Project Meteor, and from 1953 to '55, director of

(Continued on Page 4)

Personnel Sought for Overseas Positions

Space Task Group (STG), Langley Field, Virginia, has several network station administrator positions open for its Project Mercury world-wide tracking network.

These positions are all for foreign sites with a minimum one year tour of duty.

Due to the urgency of filling these positions, STG is turning to NASA centers to find the caliber personnel needed. STG is seeking people with an understanding of foreign relations, with an NASA background, and with administrative experience. Technical experience in the fields of instrumentation, electronics and communications is also very desirable, but not essential.

The Project Mercury tracking network will consist of 16 tracking stations constructed at strategic locations on the capsule orbital tracks.

The orbital tracks have been so chosen that reentry can be initiated safely during any of the three circuits of the earth and the recovery of the astronaut and the capsule accomplished in temperate South Atlantic waters.

In order to insure safe conduct of the operation, it is necessary to have several radar, telemetry and communications sites located at various points around the world. It is for several of these sites that NASA is seeking station administrators.

Some of the Mercury tracking stations now exist; others are being constructed. Establishment of this world-wide network will permit close control over the safety of the flight operation and almost continuous knowledge of flight conditions, including direct communication with the astronaut.

Western Electric Company is the prime contractor for this network and is now constructing most of the sites.

Anyone interested in further in-

NASA to Outline Programs to Industry

The NASA recently outlined its program to some 1,300 representatives of industry, other government agencies and university research activities.

The classified briefing conference, first undertaken by NASA, was scheduled for Thursday and Friday (July 28-29) in the Interdepartmental Auditorium on Constitution Avenue, between Twelfth and Fourteenth Streets N.W., Washington, D. C.

"It is NASA's policy to utilize to the maximum the capabilities and resources of industry," said T. Keith Glennan, NASA Administrator. "This requires that industry be well-informed of NASA's programs and goals, both for the immediate future and for the next 10 years. It is the objective of this conference to so inform industry."

The two-day program was divided in five parts. At the first session Thursday, Dr. Glennan and senior NASA staff members described NASA's missions, long-range plans and organization. Other sessions Thursday and Friday dealt with advanced research, launch vehicle and space flight programs.

The final session was devoted to business administration matters, including some pointers on how to do business with NASA.

Dr. Glennan said NASA centers elsewhere will undertake similar briefing conferences. These conferences, however, will deal more directly with the technical activities of the centers and specific kinds of industry support they require. The conference was attended by John F. Parsons, Ames' Associate Director, and Alvin S. Hertzog, Ames' Procurement and Supply Officer.

formation concerning these positions should contact the personnel officer.

Astroventuring... ★ with walt krumm THE SUMMER SKY

The many objects to be seen and the pleasant summer evenings combine to make the summer sky most advantageous for amateur astronomical observing.

Messier, the Frenchman, was the first to compile a systematic list of the "nebulae" to avoid confusing these with the comets he was seeking. The modern astronomer still uses his notations and the amateur astronomer finds it of particular interest for most of the list may be viewed with little or no optical aid.

A systematic search for the Messier list introduces amateur astronomy to the individual in a dramatic way. First, one becomes familiar with the Constellations (those groupings of stars in the sky with mythological names), for few of the northern constellations have no Messier objects. Secondly, with exception of the planets and double stars, one becomes familiar with the "types" of objects in the sky (the Galactic Clusters, Planetary Nebulae, Bright Diffuse Nebulae, Galaxies and Globular Clusters).

For the summer sky, try a good clear, moonless night and look for these by naked eye:

M7 - the great galactic cluster in Sagittarius just to the "left" of the pair of stars in the tail of the Scorpion. And M6 - just "above" M7. A pair of binoculars will separate these into their separate stars. Look for the Double Cluster in Perseus just below the big "W" of Cassiopeia - another galactic cluster but not an M- object though it should be. Now try the great Andromeda Nebula - three stars "down" and three stars "up" from Alpha Andromeda where Andromeda and the great square of Pegasus join. True, this is just a blob of light but it is a galaxy and you've seen an extragalactic object. Overhead, now, in the Constellation of Hercules you'll see a Globular Cluster - in the "Keystone" of Hercules on the Corona side. These are the few that can be seen by naked eye of the many objects in the sky. We'll reserve the Great Orion Nebula (the only other naked eye object) until late fall unless you wish to stay up late.

We've already learned 8 constellations in our search and have seen 3 of the 5 types of objects



Visiting Ames on Thursday, July 28, was Grover Loening, pioneer aeronautical engineer and long time friend of the NACA-NASA. Loening, seated between Russell Robinson and Dr. DeFrance, above, is on a visit to the west coast from his home in New York and plans to attend the meeting of the Institute of Aeronautical Sciences to be held in San Diego this week.

Ames Airings

.....by
Sharon Scharmen

NICK PICCOLO (Mach.) and his wife, Bea, arrived home June 25 from an exciting trip to Europe. They left April 10, flying to New York and proceeded to France on the Flandre, of the French Line. They picked up a Volkswagen in France to use on their extensive tour and visited such places as Madrid, Barcelona, Monaco, Rome, Naples, Venice, Switzerland (where he visited an old friend), Austria, Germany, and the Netherlands. While in the Netherlands, they lived with a

without optical aid. Now try binoculars and marvel at the multitude of things to be seen:

M3 - the globular cluster in Canes Venatici half way between Cor Corali and Arcturus in Bootes. M4 - a galactic cluster right next (west) to Antares the bright star in the Scorpion. Note the color of Antares while you're here. "West" of Unuk al Hay (boy! there's a good name for you) the bright star alpha in Serpens Caput, you'll find M5 - another globular cluster. M8 - lies above the tip of Sagittarius at the edge of the Milky Way. This is particularly fine as the field of view includes a cluster, a pair, and some visible gas nebula. M9 - is small and hard to find - a globular cluster in the southern part of Ophiuchus the Serpent bearer.

And we could go on for pages and hours. All one needs is the spark that sets off this train of desire to view the M- objects, and a good star atlas.

Dutch family for 5 days. Their home was 15 feet wide and 4 stories high, with the kitchen on one floor and dining room on another. They were above average means but had no refrigerator nor washing machine. However, they felt very lucky to have a car (which was 10 years old). The house was built approximately 100 years ago. Continuing their journey to Belgium and England, they flew home by 707 Jet About to sail upon the sea of matrimony will be KAROL VENOS (EMC) and her fiancé, William Eagan of Palo Alto, on August 13. The wedding will be held in Karol's former home, Red Bluff June 29th heralded the arrival of Gregory Hugh to YVONNE BOWMAN (formerly of 12-Foot and GARY BOWMAN (Entry Sim). Gregory weighed in at 7 lbs., 5 ounces. JACK TUNNELL (11-Foot) and his wife Barbara, just returned from a 3 week trip to Mexico. Attending the Summer Institute at Yale University for Dynamical Astronomy is WILLIAM MERSMAN (EMC), he left July 25 and will return August 5, 1960. Wedding bells rang out on July 2 for DONALD CARTER (Mach) and Mona McFarland at the Church of the Wayfarer in Carmel. They honeymooned at Lake Tahoe and Las Vegas. The newlyweds are now residing in Cupertino. It seems that two members of the 11-Foot are doing some "highly classified research" in their spare time. BOB LAVOND and LADO MUHLSTEIN have been indulging in the sport of water skiing of late and enjoying it very much. It's another girl (third) for TOM (Continued on Page 3)

WHO WILL BE THE

B-B-Q QUEEN???

Come to the Barbecue August 13th and Find Out!!

Have You Bought Your Ticket Yet?



ANYONE
present
at the
barbecue
is
eligible
to enter
the
contest



Who's Who at the Barbecue

Guest Chefs:

1:00-1:30 Andre Buck, Fred Hansen
 1:30-2:00 Horace Miller, John Leveen
 2:00-2:30 Thomas Canning
 2:30-3:00 George Edwards, D.C. Robinson
 3:00-3:30 Glen Goodwin, Larry Marsh
 3:30-4:00 Henry Citti

Barbecue Queen Judges:

Chief Justice John F. Parsons
 Hon. Judge Ed Betts
 Hon. Judge Fred Hansen

Barbecue Work Detail:

Jerry Hall, Barbecue steaks
 E. P. Ekholm, Garlic bread
 Tom Pirtle, Corn on the cob
 Ed Hoin, Barbecue chicken
 Fred Bear, Tossed salad
 Michael Bondi, Ticket collection
 Irving Israel, Ice cream
 Hy Zimmer, Barbecue steerb主rgers
 Burt Skow, Beer on tap
 Ray Matthews, Soda pop
 Dick Kurkowski, Script ticket sales
 Bob George, Games
 Barbara Citti, Decorations, posters
 Barbara Citti, Decorations, posters

Branch Collectors for the Barbecue:

Vehicle Environment Division...
 Structural Dynamics, Bob George
 Physics Branch, Virginia Hughes
 Entry Simulation & 3.5-Foot, Norma
 Formy Duval
 HBR, Steva Hill

Aero-Thermodynamics Division...

SSFF, Janet Konrath
 Heat Transfer, Charles Fitzmaurice
 Fluid Mechanics, Mary Hall
 Trisomic (6x6), Marion Wallis
 Trisomic (12-ft.), George Kenyon
 Theoretical, Jeanne Hyett

Full Scale & Systems Research Division...

40- by 80-, Pete Patterakis
 F&SS, Dottie Moran
 Operations, Dick Gallant
 Dynamics Analysis & Guidance & Control,
 Hy Zimmer

Unitary Division...

Unitary Operations, Ernie Ransted
 8- by 7-, Irma Ramey
 11-ft., Irma Ramey
 9- by 7-, Irene Tharpe

Instrumentation Division...

EMC, Alis Rogers
 Vehicle Instr. Res., Gracie Webster
 Facil. Instr. Res., Jerry Reed
 Mechan. Instr., & Electronic
 Instr., Virginia Strader

Administration Division...

Admin. Bldg. (downstairs) Sharon Scharmen
 Admin. Bldg. (upstairs) Barbara Thompson
 Procurement, Alice Fontanilla
 Fiscal, Olga Thompson
 Property & Supply, Irving Israel
 Library Section, Vicki Malatesta

Technical Services Division...

Machine Branch, Geo. Walker, Ed Magee
 Struc. Fab., & Model Finish, Dale Frankel
 Model Const., Fergus Brown
 Maintenance, ----
 Transportation, ----
 Airc. Serv. & Airc. Insp., Joe Anaya
 Aviation Sheet Metal, C. Sencenbaugh
 Aircraft Modification, Glen Haney

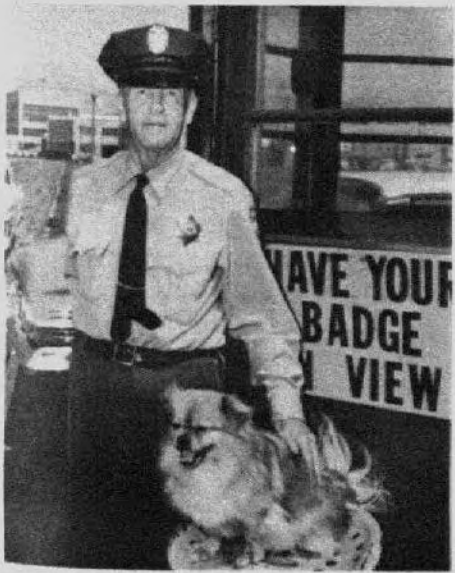
Engineering Services Division...

Electrical Branch, Jeanne Neale
 Mech. Engr., Construc. Engr., &
 Construct. Insp., Lysle Minden
 Photographic Branch, Jo Kulich

Ames Airings.....

(Continued from Page 2)

SNOUSE (Physics). Susan arrived July 17, 1960 weighing 9 lbs, 8 ounces.....Joining the "proud new fathers" club are BOYCE NUTE who welcomed a boy on May 5, weighing 8 lbs and 1 ounce, and BASS REDD who has a new son born July 13, weighing 7 lbs and 8 ounces. Both are of the 11-Foot Branch.....JOHN SPREITER (Theo) and his wife, Brenda, left on July 16 for Copenhagen to attend a symposium on Aeronomy. From there they proceed to Helsinki where John will give a paper at the NI General Assembly of the International Unions of Geodesy and Geophysics, then on to Stresa, Italy to attend the 10th International Congress of Applied Mechanics and to Zurich, Switzerland to attend the 2nd International Congress of Aeronautical Sciences. Also planned are visits to England, the former home of Brenda, and Ireland. After they return to the states, they will visit Minnesota John's former home.....MILDRED and BILL WARREN (Pers. and Avia. Shtmetl) returned from a trip to Oregon on July 25. Included in their tour were the Columbia River basin and the Rogue River country.....A familiar voice can be heard once again when you call the Photo Branch. LU EMIL is back after several weeks' sick leave which included a short stay in the hospital. It's real nice to have you with us again, Lu.....All of us who use Gate 18 will miss the friendly face of FRANK



"POP" MELLICK for the next three weeks. "Pop" is going to the hospital for a hernia operation and will take a couple of weeks to recuperate. His inseparable buddy "Pom" will stay with his son in San Jose, but both will be back greeting their friends as soon as Pop is able.

Ames Closeups



RICHARD PEA

At the age of ten Richard O. Pea robbed his first bee tree and developed a spare time interest that may soon supply a sizeable portion of his yearly income. 'Pea's Bees' is the name of his 228 acre bee ranch near Almaden where 80 hives of diligent bees are even now amassing next year's honey crop, which will exceed 50 pounds of honey per hive each season. The site of this operation is deep in the hills south of Almaden, where a narrow road winds into the brushy, isolated area fragrant with the aromas of wild black sage, blue lupin, toyon and hollyhock--a bee paradise.

Pea, who is building up his enterprise gradually and visits the ranch only weekly, has little trouble with pilfering at the hives but poachers occasionally trespass to hunt the abundant wild life. He has been stung often, but apparently an immunity has built up, for a sting will disappear in a day. His method of collecting bees is to scoop them into a container with his bare hand, but he doesn't advise beginners to try it.

Born in Sayre, Oklahoma, Dick lived in various parts of the southeastern United States before settling in California with his parents in Chowchilla, where he always had a hive or two in the back yard. He was forced to limit his bee cultivation for a time during the three years he served on duty with the Coast Guard in World War II.

Shortly after Pea entered San Jose State College as a liberal arts major, the Korean war began and he was called into the Navy. He broke his leg while skiing in Alaska and was out of action six months before sailing

to the Korean theater of operations.

After the war he re-entered San Jose State and worked at Ames for eleven months before receiving his EE degree. Dick now works in the Facilities Instrumentation Branch.

Although his spare time is well taken up with his bees-ness, he still manages to participate in concerts given by the 100-voice San Jose Municipal Chorus. Dick, a second tenor, has been with the Chorus twelve years and enjoys barber shop and small group work.

Pea, a bachelor, makes his home at 1862 Market St., Santa Clara. The ranch, upon which he plans to start fruit trees soon, his caterpillar tractor, his truck and the bees pretty well take up any slack in his budget, and his interest in marriage at this time is slight. In addition, finding a spouse who shares his enthusiasm for the buzzing employees of 'Pea's Bees' is difficult indeed.

WANT ADS

For Sale -- Greenfield deluxe tap and die set. Includes sizes 12 NC to 4NC, drills (6 each), taps of each size, dies, drill index, thread gauge, tap and die handles. Never used. R. W. Christin, ext. 241 or WH 8-7544.

For Sale -- 1949 Packard Convertible. Radio, heater, overdrive. Good mechanical condition. \$195. Call Tusch at YO 7-3342 or ext. 393.

For Sale -- 1951 Olds Super 88 Hardtop. Radio heater, hydramatic. Exceptionally clean. Best offer above \$300. Call Viegas, ext. 418.

For Sale -- Heathkit W-4M 20 watt amplifier and WA-P2 preamplifier. Good operating condition. Cost \$68 as kit. Sell for \$40. Call Nickle, ext. 269 or WH 8-5167.

For Sale -- G. E. refrigerator with freezer top and automatic defroster. Excellent condition YO 8-2065.

For Sale -- German shepherd puppies AKC registered, shots, handsome, healthy and friendly. Reasonable. Call Marvin Kussoy, ext. 426 or FI 1-4197 - evenings.

For Sale -- 1949 Chrysler Sedan, radio and heater, \$125. 4 Redwood chaise lounges with pads and covers. Boy's 20-inch bike. Lionel train set with track mounted on 4x8 table. Call ext. 336.

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Editor: B. P. Wilson

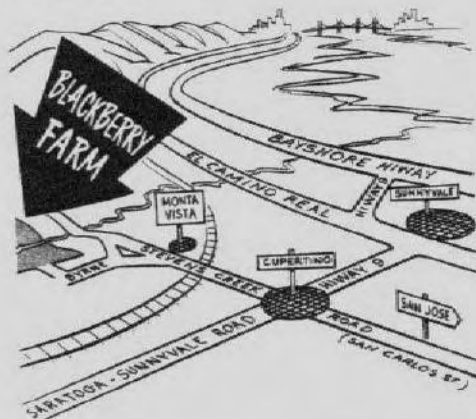
Reporters: NASA Employees

SEAMAN SUCCEEDS HORNER... (Continued from Page 1)

the Flight Control Laboratory. When Dr. Seamans went to RCA in 1955, it was to become manager of the Airborne Systems Laboratory and chief systems engineer of the Airborne Systems Department. In 1958 he became chief engineer of the Missile Electronics and Controls Division, and in this capacity has supervised all scientific engineering and technical personnel in the division.

No stranger to NASA and its predecessor organization, the National Advisory Committee for Aeronautics, Dr. Seamans from 1948 to '58 served on technical committees of NACA. From '57 to 1959 he was a consultant to the Scientific Advisory Board of the Air Force, and earlier this year was appointed a member of that Board.

HEADING FOR THE BARBECUE? DON'T KNOW HOW TO GET THERE? FOLLOW THIS MAP!



The Ames Entertainment Committee pauses on their inspection tour of top grade beef for the forthcoming barbecue to admire a placid Holstein. Hy Zimmer carries measuring stick he intends to use to make sure beef "measures up". The Annual Ames Barbecue is scheduled for Saturday, August 13, at the Blackberry Farm in Monta Vista.



JAMES V. KELLEY HONORED AT RECENT DINNER

A dinner attended by more than 110 co-workers and friends marked the end of 36 years service completed by James V. Kelley, Chief of Mechanical Instrumentation Branch. During the dinner, held at L'Omellerie Thursday evening July 21, gifts including tools and a radio were presented him as well as a "Retirement Center," which consisted of an umbrella-shaded chaise lounge for the leisurely conduct of his affairs this summer. Slides and a photo album were utilized in reviewing his career both here and at Langley Research Center.

WOODROW COOK TO ATTEND OLYMPIC GAMES

Woodrow Cook (Chief, 40-x80-) and his wife, Neysa, left here Friday, July 22 by automobile on the first part of a trip that will take them through much of Western Europe and enable them to see the Olympic spectacle in Rome, an elusive dream since 1932.

After leaving their two children with relatives in Minnesota for a visit during their absence, the Cooks boarded a jet liner for London to begin their seven weeks tour. Mixing business with pleasure, Cook will visit the Royal Aeronautical Establishment at Farnborough, as well as ONERA in Paris, France.

Germany and Switzerland will be visited by the Cooks before arriving in Rome. Mrs. Cook will handle the photographic duties at the Games; Woody has asserted that he will do nothing but give his undivided attention to the thrilling events that drew him half-way around the world to witness.

The Cooks will return home by September thirteenth.

Ames Cafeteria Menu

WEEK OF AUGUST 8

Mon. Beef Ravioli, Italian Meat Sauce, Tossed Green Salad or Vegetable, Ice Cream or Custard Rice Pudding..... 90¢
Cream of Potato Soup..... 15¢

Tues. Pot Roast of Beef, Buttered Noodles, Fresh String Beans, Ice Cream or Fruit Jello..... 95¢
French Onion Soup..... 15¢

Wed. Salisbury Steak, Fried Onions, Whipped Potato, Harvard Beets, Ice Cream or Apple Cobbler..... 95¢
Split Pea Soup..... 15¢

Thurs. Braised Sirloin Tips, Mashed Potato, Corn on the Cob, Ice Cream or Figs..... 95¢
Dutch Vegetable Soup..... 15¢

Fri. Filet of Sole, Tarter Sauce, Shoestring Potatoes, Cole Slaw, Ice Cream or Fruit. 90¢
Clam Chowder..... 15¢
SPECIAL -- Meat Entree
Hamburger..... 30¢
Steak Sandwich..... 55¢
Cold Plate..... 65¢

WEEK OF AUGUST 15

Mon. NASA Meat Loaf Special, Sugar Peas, Scalloped Potatoes, Ice Cream or Rice Pudding..... 95¢
Vegetable Soup..... 15¢

Tues. Roast Leg of Lamb, Savory Dressing, Whipped Potatoes, Salad or Vegetable, mint Jelly, Ice Cream or Fruit..... \$1.00
Butter Bean Soup..... 15¢

Wed. Ground Chuck Steak and Onions, Baked Potato, Cottage Cheese and Fruit Salad, Ice Cream or Bread Pudding..... 95¢
Split Pea Soup..... 15¢

Thurs. Baked Ham, Yams or Whipped Potatoes, Danish Red Cabbage, Ice Cream or Fruit..... \$1.00
Beef Broth and Barley..... 15¢

Fri. Grilled Salmon Steak, Tarter Sauce, Parsleyed Potatoes, Cole Slaw, Ice Cream or Jello..... 90¢
Clam Chowder..... 15¢
SPECIAL -- Meat Entree
Hamburger..... 30¢
Steak Sandwich..... 55¢
Cold Plate..... 65¢

Complete Luncheon Includes
BREAD & BUTTER, TEA or COFFEE

AUGUST 13th SAT
Blackberry Farm
DINNER SERVED 1-4 PM



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

The

Astrogram

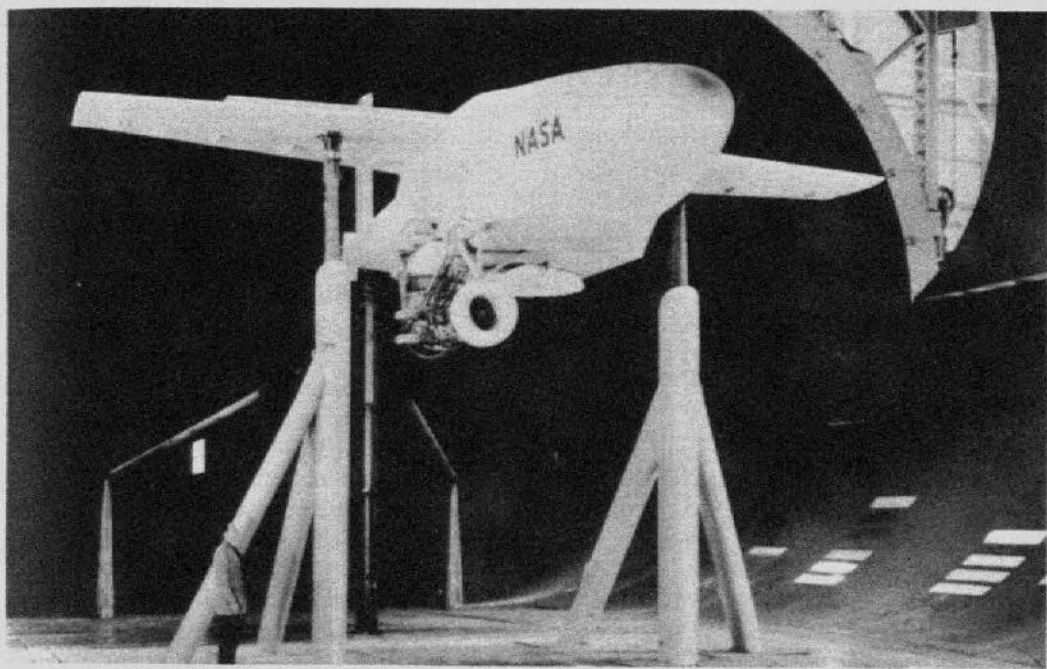
AMES RESEARCH CENTER, MOFFETT FIELD, CALIFORNIA

VOLUME II

AUGUST 18, 1960

NUMBER 22

Featured in Aviation Week



The above photo was featured on the cover of Aviation Week for August 8, 1960. Dave Hickey (40- by 80-) is seen at lower left inspecting the model. See story on Page 3.

Foothill Registration Begins

Fall semester counseling examinations for Foothill College were given Saturday, August 6. Instruction in day and evening classes will begin September 6. Part-time evening students are required to take the examinations if they plan to enroll in courses in the areas of science, electronics, business, mathematics and English.

Registration for day and evening classes began August 3 and runs through September 2. Counselors will be available by appointment only for program approval from 9 a.m. to 4 p.m. Monday through Friday. Evening counselors will be available from 7-9 p.m. Monday through Thursday.

More than 150 day courses will be offered in 30 different subject areas. An additional 77 courses will be offered in the evening.

SADOFF PRESENTS REPORT BEFORE NATIONAL IAS MEETING

Melvin Sadoff of Flight and Systems Simulation Branch early this month presented a report entitled "Recent Experience Pertinent to Piloted Flight Simulators" to more than 2000 engineers assembled at the annual IAS meeting in San Diego.

The paper, which was co-authored by Euclid C. Holleman of Flight Research Center, Edwards, California, discusses the requirements for flight simulators from V/STOL to hypersonic aircraft.

Earlier this year Sadoff presented a report discussing longitudinal control problems at low stability and damping levels before a joint USAF-NASA conference at Langley Field, Virginia.

THIS YEAR EVERYBODY GIVES!



Plan to Give thru the Ames Givers Fund Drive in September

The Ames Givers Fund helps support the Santa Clara County United Fund and the San Mateo County United Fund (part of the United Bay Area Crusade). Plan to make your donation at Ames to support the agencies where you live.

AETNA, BLUE CROSS CLAIMS

All claims for benefits under either the Aetna or Blue Cross-Blue Shield medical insurance plans must be made to the following appropriate office:

Aetna Life Insurance Company
360 - 22nd Street
Oakland 12, California

Blue Cross FEHBA Group
1919 Webster Street
Oakland, California

Ames Airings

..... by

Sharon Scharmen

Just returned from six weeks in Europe is JESSIE GASPAR (Struc. Dyn.). Having traveled in Germany, Austria, Spain, England, Scotland and the Scandinavian countries, and flying over 20,000 miles, Jessie says she still doesn't like to fly! However, it is to be noted that she is already planning her next trip (by boat) and a "little bit" by plane. Those who know Jessie's love for travel --this being her second trip to Europe with two side trips to the Hawaiian Islands within the last six years--will not be surprised to see her once more climb into a plane in order to reach such places as Buenos Aires or Bang-



Ames Cafeteria Menu

WEEK OF AUGUST 22

Mon. Beef Stew, Fresh Vegetables, Steamed Rice, Ice Cream or Bread Pudding.....95¢
Vegetable Beef Soup.....15¢

Tues. Corned Beef and Cabbage, Carrots, Parsleyed Potatoes, Ice Cream or Jello.....95¢
Split Pea Soup.....15¢

Wed. Cross Rib Roast Au Jus, Whipped Potatoes, Green Salad with Sour Cream Dressing or Vegetable, Ice Cream or Bread Pudding.....95¢
Barley Soup.....15¢

Thurs. Ground Chuck Steak, Fried Onions, New Creamed Potatoes, Sugar Peas, Ice Cream or Jello.....95¢
Potato Soup.....15¢

Fri. Grilled Halibut Steak, Parsley Butter, Tartar Sauce, Shoestring Potatoes, Harvard Beets, Ice Cream or Fruit.....90¢
Clam Chowder.....15¢
SPECIAL---Meat Entree
Hamburger.....30¢
Steak Sandwich.....55¢

WEEK OF AUGUST 29

Mon. Pot Roast of Beef, Buttered Noodles, Creamed Corn, Ice Cream or Jello.....95¢
Vegetable Soup.....15¢

Tues. Braised Short Ribs of Beef, Green Salad with French dressing or Vegetable, Ice Cream or Bread Pudding.....95¢
Macaroni-Tomato Soup.....15¢

Wed. Beef Ravioli and Italian Meat Sauce, Tossed Salad or Vegetable, Ice Cream or Fruit.....90¢
Split Pea Soup.....15¢

Thurs. Swiss Steak, Whipped Potatoes, Fresh String Beans, Ice Cream or Rice Pudding.....95¢
Bean Soup.....15¢

Fri. Fillet of Sole, Tartar Sauce, French Fries, Beets or Spinach, Ice Cream or Fruit.....90¢
Jello.....15¢
Clam Chowder.....15¢
SPECIAL---Meat Entree
Hamburger.....30¢
Steak Sandwich.....55¢
Complete Luncheon includes
BREAD & BUTTER, TEA or COFFEE

kok.....MARILYN MYERS (EMC) is spending 4 weeks in England. She left August 1 and will return August 17. We will hear more about her trip when she returns.....ZOLA BRINTON (Ad.Serv.) spent two weeks' vacation camping near Twin Lakes. She and her husband enjoyed fishing in the East and West Carson Rivers, being lucky in catching some good mountain trout. They also visited Carson City, Nevada....Hanging up diapers these days are a few Ames' employees who have new additions to their families. MARION HODGE (3.5-Foot) welcomed the arrival of Mark Richard on August 8, weighing 6 lbs, 1½ ounces. WALT MC NEILL (FSS) is the proud father of a baby boy, Larry Allan, born July 13. Larry weighed 5 lbs, 6 ounces. THOMAS ROWLAND (EMC) welcomed his second child into the world July 19. John Lester weighed in at 8 lbs and is 20 inches tall. GILBERT PARRA (EIB) is a new father of a baby girl, Jennifer, who was born August 2, weighing 6 lbs, 1 ounce.....August 20th will be the day JERRY REED (Instr.) and Chuck Verdugo of Santa Clara are to be married. They will have a home wedding, then honeymoon in Monterey. Their future residence will be in Santa Clara.....Former secretary of the Air Force Liaison Of-

WANT ADS

For Sale--Girl's 20-inch bicycle, blue, balloon tires. \$12.50. Call Blackaby, ext. 252, or DA 2-0587.

For Sale--14-foot glassed boat, 25 hp Evinrude, and trailer. Boat has windshield, steering and controls, mahogany decks. Excellent condition. Easily pulls two skiers. \$750. Call Bud Hult, ext. 293 or AN 6-6332.

For Sale--7 transistor radio, portable, Admiral, \$22.50. Call Dick Regan, ext. 434.

For Sale--Home by owner. 3-bedroom, 2-bath, 16x24 family room, utility area, fully landscaped, sprinklers front and rear, 4½% G.I. loan, \$19,950. Call WH 8-3966. Near schools and shopping areas.

Wanted--Establish or join ride group from area between Valley Fair and Campbell on Winchester Road, San Jose. 7:30 - 4:00 shift. Call Dick deSavigny, ext. 244 or CH 3-4070.

For Sale--3 piece sectional, rattan, excellent condition. \$40. Yvette, ext. 246.

For Sale--1952 Plymouth station wagon. Radio & heater. \$225. Call Lundell, 275.

For Sale--1959 Plymouth Sports Fury convertible. Automatic transmission, power steering, power brakes, radio heater, swivel seats, nylon top, bronze color, white wall tires and big engine--395 cu. in. Just take over payments. Contact Jerry Reed, ext. 293.

Wanted--One or two for ride group, 8:00 to 4:30 shift. Los Altos near El Camino. Call Don Davis, ext. 260.

For Sale--1959 Pontiac Catalina 4-door. Priced for quick sale. Power steering, automatic transmission. Call Hank Cole, ext. 223.

Astroventuring... ★ with walt krumm

Western Amateur Astronomers 1960 Convention August 23-27, San Jose, California!!

The Western Amateur Astronomers is an affiliation of amateur societies west of the Rockies. Its primary function is to promote interest in and advance the hobby of amateur astronomy. Each year a convention is held by a host society for the pleasure of the individual member clubs.

This year the San Jose Amateur Astronomers and the Peninsula Astronomical Society of Palo Alto are hosts to the Western Amateur Astronomers.

The convention will be held at the San Jose Civic Auditorium and the program will include papers, films and demonstrations by the amateur and invited professional speakers.

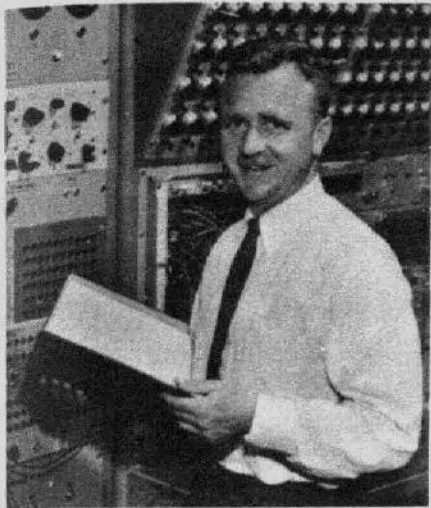
The program also includes field trips to local places of interest--Ames Research Center, Stanford Radio Astronomy Installation, and Lick Observatory. A public star party is to be held. A final banquet, with a guest speaker and presentation of the WAA-G. Bruce Blair Award to the person that has outstandingly assisted amateur astronomy, will conclude the convention.

Meeting with WAA will be the Western Satellite Research Network group for their convention Tuesday, August 23 and the Association of Lunar and Planetary Observers for their convention Wednesday, August 24.

Why all this in the Astrogram? This is our chance to get acquainted with the activities of the amateur astronomer for they emphatically invite the interested visitor. Of special interest to the readers of the Astroventuring column will be the Public Star Party Friday evening, August 26 at the Santa Clara County Fair Grounds where we will be able to view many of the objects mentioned in the Astroventuring articles. Plenty of telescopes are indicated and a good sky is promised(?). Call the Astroventurer at 401 for any further information desired.

fice, NINA GULL, is a brand new mother of a baby girl, Grace Leslie. Grace was born August 7, weighed 7½ lbs.....JERRY PANIGHETTI (EIB) and party had a very successful deer hunt during the week of August 1. They bagged two bucks on opening day.

Ames Closeup



JOHN DUSTERBERRY

John C. Dusterberry's mission at Ames revolves around a 150 h.p. electric motor in the Flight Operations Lab.

Dusterberry, former head of the Electrical Engineering Section, has been assigned as Chief of the newly-formed Analog and Flight Simulator Branch. The new branch, which is in the Full Scale and Systems Research Division, has assumed the analog and simulator responsibilities from the former Dynamics Analysis Branch.

A graduate of Stanford University in 1943 with a BS in Electrical Engineering, Dusterberry entered the U.S. Navy shortly after coming to work at Ames, and remained here on military status until 1946. During the past ten years that he has served as Section Head, the section has been responsible for wiring designs on many new Ames facilities, including the 3.5-foot Wind Tunnel, the Hypervelocity Ballistic Range, numerous intercommunication facilities, wind tunnel drive systems and controls and the forerunner of the Ames 5-degree Flight Simulator, the roll-pitch chair.

Designated the NE-2 (any two), the roll-pitch chair is mounted on pivots so that two simultaneous motions may be made at one time. Three of the six possible motions on a free object are roll, pitch and yaw. The NE-2 is obviously limited in research value, since its motion is confined to any two types--roll and pitch, roll and yaw or pitch and yaw.

When completed, the 5-degree simulator will offer five different motions simultaneously. In addition to roll, pitch and yaw, horizontal and vertical freedom

NEW FILM IN THE LIBRARY

A new film has been received in the Library entitled "X-15 Documentary". This film is available for public showing and may be obtained by contacting the Library, extension 262.

will be present. The simulator consists of a cockpit which is mounted on a framework which moves about a circular track and is capable of producing forces up to 6 times the force of gravity centrifugally and 3 g's vertically. Connected to the simulator are analog computers with the capability of producing physical effects on the cockpit controls similar to those which would be encountered by the pilot if he were flying a particular type of present day aircraft and, by analogy, the computers are capable of producing effects on the controls which can be expected in theoretical aircraft.

From this complex machine Ames engineers can learn in advance data regarding the needs of control systems for various types of flight, the preparation of pilots for new flight concepts and the limitations of pilots in unusual stress conditions.

Design of the simulator was accomplished at Ames by cooperation of the Mechanical Engineering, Electrical Engineering, Vehicle Instrumentation, and Flight and Systems Simulation Branches.

Dusterberry, who has become increasingly involved in the construction of the 5-degree simulator since its beginning early this year, will serve as project supervisor during the balance of the construction and instrumentation calibration period.

San Francisco-born, he spent most of his early life on a 25 acre apricot ranch near Fremont. He enjoys trips to the Sierra each summer, staying at various resorts. His wife is the fisherman of the family, but uses no hooks. The termination of many dining room conversations with avid fishermen finds Marian Dusterberry the recipient of gift trout and lake fish, the result of her admiration for the delectable catches brought in during the day!

John Dusterberry, his wife and their daughter, Anne, make their home in Palo Alto.

PLAN NOW.....Give your "fair share" through the Ames Givers Fund next month and support the agencies where you live.

AMES ENGINEERS PROVE LIFT-FAN FEASIBILITY FOR VTOL AIRCRAFT

Twenty hours of tests conducted at Ames last month have shown the potential worth of the lift-fan concept in VTOL operations. Project Engineer Dave Hickey and the engineering staff of the 40- by 80-Foot Wind Tunnel, who have been studying lift-fan designs since 1956, now have a successful combination of components that prove the feasibility of this approach to VTOL flight.

Static tests conducted jointly by the Army and General Electric Company proved the reliability of the mechanical components, which feature a great many sheet metal fabrications for lightness. The GE lift-fan is a large (76 inches) diameter fan with a reaction turbine added at the fan blade tips. Hot gas from a turbojet engine, coupled by ducting to the fan, is directed to the reaction turbine to drive the fan. At operating speeds the fan produces a vertical lift equal to about three times the thrust of the turbo-jet. In horizontal flight the turbo-jet engine produces forward thrust in the conventional manner, the hot gas being directed rearward through a valve which cuts off flow to the fan tip turbines. The model in which the fan is installed was designed by George Aoyagi of the 40- by 80-Foot Wind Tunnel Branch.

A major uncertainty that has been proven controllable is distortion in the air flow to the fan as forward speed increases. For the particular configuration tested, Ames engineers have found virtually no flow distortion in the transition range, although air entering the fan must make an increasingly sharp turn as forward speed increases.

The work of the 40- by 80-Foot Wind Tunnel Branch engineering staff has been featured in the August 8, 1960 issue of Aviation Week magazine. The cover photograph (on Page 1), as well as several close-up studies of the design accompanying the story, were taken by the team of Joe Marchisella, Emerson Shaw and Dino Pongeggi of the Photographic Branch.

GIVE WHERE YOU WORK TO SUPPORT THE AGENCIES WHERE YOU LIVE.....Ames Givers Fund Drive begins next month!

Recent Arrivals

Employees recently reporting for duty at Ames include JACKIE COUCH, of New Mexico, assigned to the 6- by 6-Foot as a Secretary; JERRY HORN, of Palo Alto, assigned to Maintenance as a Cleaner; DOROTHY STEPHENS, a former employee, assigned to Fiscal as a Time, Leave and Pay Roll Clerk; ALICE FONTANILLA, of Stockton, assigned to Procurement & Supply as a Clerk Typist; EDEANE RAMON, a former employee, assigned to Heat Transfer as a Math Aid; VIRGINIA HUGHES, of Palo Alto, assigned to Physics as a Secretary; JAMES DER, of Mountain View, assigned to Theoretical as a Research Engineer; EDWARD FLETCHER, of Cleveland, Ohio, assigned to Electronic Machine Computing as a Machine Programming Mathematician; MARLA ENGLERT, of Pennsylvania, assigned to the 40- by 80-Foot as a Math Aid; CHESTER IVORY, of Oakland, assigned to Maintenance as a Laborer; CAROLE KRAMER of Santa Clara, assigned to Fiscal as a Clerk-Typist; ALICE NOURSE, of Los Altos, assigned to Procurement & Supply as a Clerk-Typist; CAROL LEE SIEVERS, of San Jose, assigned to Admin. Services as a Clerk Typist; FRANCES NAMIMATSU of Santa Clara, assigned to Heat Transfer as a Math Aid; PERCY MC GOVERN, of San Jose, assigned to Maintenance as a Cleaner; CAROL WALLISCH, of Santa Clara, assigned to the 9- by 7-Foot as a Math Aid; CAROL PETTITT, of San Jose, assigned to the 11-Foot as a Math Aid; JACK THOMPSON, of Napa, assigned to the 3.5-Foot as an Engineering Aid; CAROLYN SILVA, of Santa Clara, assigned to the 11-Foot as a Clerk-Typist; EDWARD MERRITT, of Menlo Park, assigned to Maintenance as a Cleaner; JOHN WOLFE, of Urbana, Illinois, assigned to Physics as an Aeronautical Research Engineer; WILLIE JONES, of Palo Alto, assigned to Transportation, as a Truck Driver; RALPH MOSSINO, of San Luis Obispo, assigned to Facilities Instrumentation Research as a Research Engineer; RICHARD DE SAVIGNY a former employee, assigned to the 40- by 80-Foot as an Aeronautical Research Engineer; WILLIAM GUNTER, of Los Altos, assigned to the Vehicle Instrumentation Research Branch as a Research Engineer.

Barbecue Queen 1960



Hy Zimmer holds his hand over the head of Jeanette McGee (Admin. Services) who was selected as Ames Barbecue Queen at the annual barbecue held at the Blackberry Farm last Saturday. Queen Jeanette is surrounded by her "court" of runners-up, with Judges Fred Hansen (Physics Branch) and Marty Margolis (Electrical Branch) present for the ceremonies. The barbecue was attended by over 250 Ames employees, families and friends.

BOWLING

ALL-AMES BOWLING LEAGUE FORMING FOR 1960-61 SEASON

The All-Ames handicap bowling league begins its 1960-61 season Thursday, September 8 at 6:30 p.m. on the El Camino Bowl alleys in Mountain View.

This year, as in the past, the league will be made up of 15 teams composed of employees at Ames Research Center. All bowling is done on a handicap basis, the handicap being 75% of the difference between the bowler's average and 200.

The league is open to all Ames employees who enjoy bowling and friendly team competition. As this league operates on a handicap basis with no designated maximum or minimum team average, both the veteran and novice in bowling can compete on equal footing.

Interested bowlers are invited to enter into the annual 30 weeks of bowling competition. You may either form a team (five bowlers) or contact Abe Brass, ext. 232 or Charles DeRose, ext. 275 who will place you on an established team.

QUESTION ON PAY RAISE

A number of employees have contacted the Personnel Office inquiring about the effective date of the new pay raise. The law specified the raise would go into effect the first complete pay period after July 1, 1960. That period began on July 10 and ended on July 23. Checks for this period were distributed 10 days after the completion of the pay period, as is customary, on August 3.

Therefore, although the raise went into effect the first pay period in July, it did not appear in your checks until August 3.

The ASTROGRAM, an official publication of the Ames Research Center, NASA, Moffett Field, Calif., is published bi-weekly in the interest of Ames employees. Send contributions to The ASTROGRAM -- phone 385. Deadline: Thursday between publication dates.

Editor: B. P. Wilson
Reporters: NASA Employees

GIVE WHERE YOU WORK TO SUPPORT THE AGENCIES WHERE YOU LIVE.....Ames Givers Fund Drive begins next month!

The Astrogram

AMES RESEARCH CENTER, MOFFETT FIELD, CALIFORNIA

VOLUME II

SEPTEMBER 1, 1960

NUMBER 23

New Data Reduction Center Under Construction

Contractors are already at work on Ames newest facility, the \$1,223,000 Data Reduction Center which will be erected west of the circular drive which surrounds the Administration building. The Center, depicted below in an architect's drawing, consists of a two-story center section with a basement and two single-story arc-shaped wings.

Basically a computer building, it will house the large IBM 7090 and Honeywell 800 digital computer equipment now on order. Five 38' x 52' rooms have been set aside for this and other data processing equipment. The wings will be utilized for office and administrative space. The basement will contain electric switchgear, air conditioning equipment and storage files.

Scheduled for completion next July, the building will fill a need which was first felt in 1953, when Electronic Machine Computing Branch's 204 and 205 computers

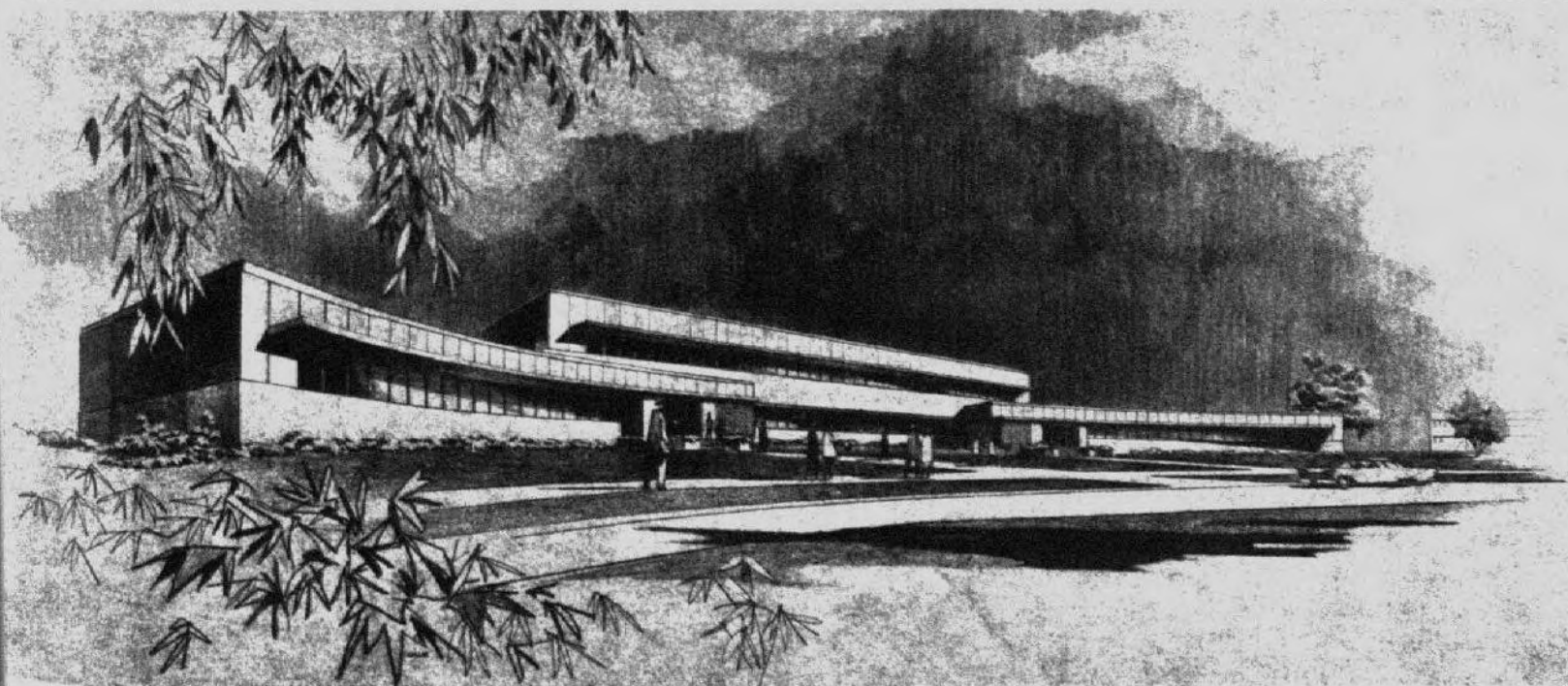


Official groundbreaking ceremonies for the new Data Reduction Center took place Friday, August 26, 1960. Present for the event were (left to right) Arnold G. Swenson, of the Carl N. Swenson General Contracting firm; John F. Parsons, Associate Director; B. R. Gause, of the Swenson firm; Alvin S. Hertzog, Ames Procurement Officer; Derrill Hansen, of Construction Engineering Branch; James A. White, Chief of the Instrumentation Division; A. G. Buck, Chief of Engineering Services Division; and Clifford W. Swenson, of the contracting firm.

invaded the Unitary Wind Tunnel and more recently when the IBM 704 computer was installed in the 7- by 10-Foot Wind Tunnel shop.

Carl N. Swenson of San Jose

is General Contractor for the project, which will add 51,550 square feet of floor space to our existing facilities here.



DATA REDUCTION CENTER

Astroventuring...

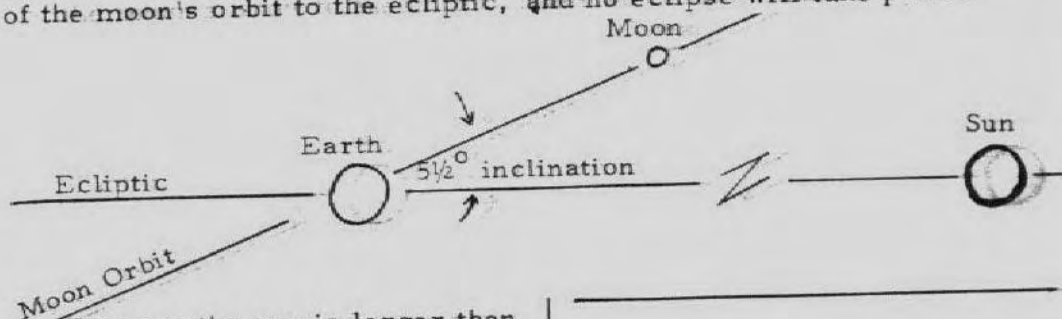
★ with Walt Krumm

ECLIPSE OF THE MOON

On the morning of September 5th we will have a total eclipse of the moon. This event occurs when the earth comes between the sun and the moon. Let's take a look at this event and see what we can learn.

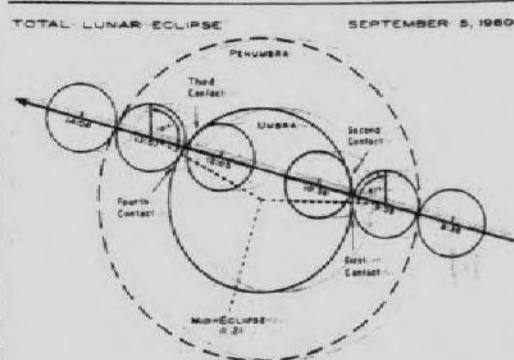
Trailing out away from the sun, the earth's shadow extends some 859,000 miles into space and at the moon's distance is over 2½ times the diameter of the moon. This means that an eclipse will occur if the earth's shadow is pointing in the right direction - sun, moon and earth in a line. The actual width of the shadow depends upon the sun-earth and earth-moon distances at the time of the eclipse.

The earth's shadow will point toward the moon at full moon, at or near the "nodes" of the moon's orbit. At other full moons the earth's shadow will fall north or south of the moon because of the inclination of the moon's orbit to the ecliptic, and no eclipse will take place.

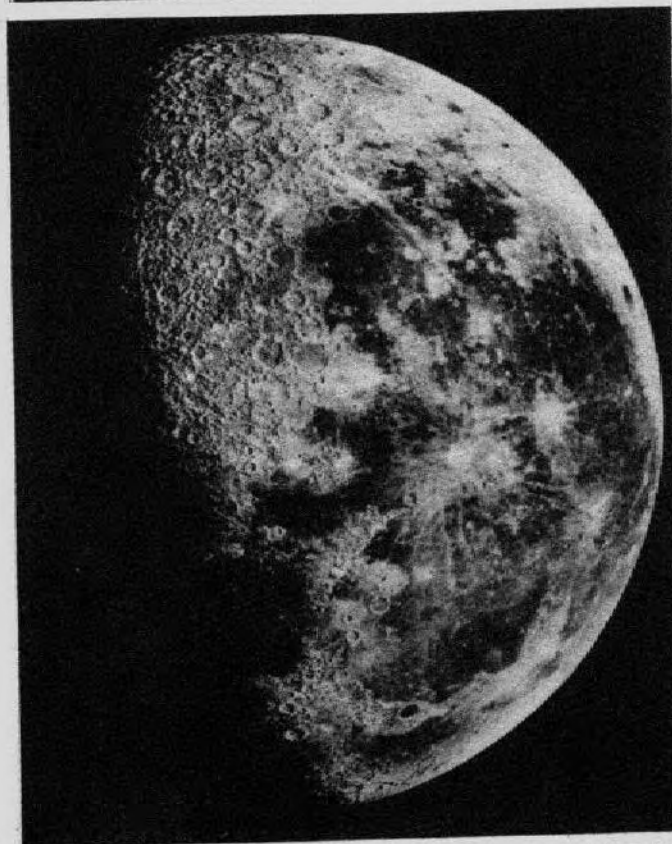


Because the sun is larger than the earth, the earth's shadow is a cone pointing away from the sun and another diverging "half-shadow" is formed in which only part of the sun's light is cut off. The partial shadow is called the penumbra and the full shadow the umbra.

A lunar eclipse is "timed" into seven parts. The first contact, when the moon just enters the penumbra; the second contact, when the moon first enters the umbra; the third contact, when the moon is fully into the umbra; and the mid-eclipse. This procedure reverses itself for the other three events on the way out.



Note: TIME indicated on sketch is "Universal time." (subtract 7 hours for PDST)



Twenty-day moon.

Because of the refraction of light by the earth's atmosphere, the total eclipse of the moon is never completely dark. As the red rays of light are bent the most by the atmosphere, the moon becomes deep red or copper at total eclipse and this (with the length of totality - 2½ hours) is what makes a lunar eclipse of interest to the viewer.

Now for some of the points of interest to the observer.

The partial shadow of the penumbra is so thin that it is only during the last 15 or 20 minutes

that it is noticeably visible. As the moon enters the umbra it is interesting to watch the earth's shadow progress across the moon. Notice the shape of the shadow line and notice the shape of this line on picture during a regular moon phase to compare the difference. Just before the moon enters totality and when just a fraction of the moon is still illuminated by the penumbral light from the sun -- the most beautiful instance occurs -- the "Japanese Lantern Effect." The moon is then colored from the brilliant spot of illumination to the deep copper of eclipse. Watch for this. This also occurs again on the way out from totality also. Then as the moon is in totality -- watch the color deepen on the moon and see how many features of the moon you can recognize in the shadows. Also notice the stars appear around the moon that could not be seen earlier because of the full moonlight.

For some unexplained reason, the totality of a lunar eclipse is longer than the geometry of the event predicts and this difference from prediction is not the same for each eclipse. Therefore, the accurate timing of a lunar eclipse is still of importance and many avid amateur astronomers take part in this endeavor. During totality of a lunar eclipse, patrols of observers also watch for the possibility of seeing a meteor land on the moon. This would indicate a later search for the place it hit and also give some insight upon the density of the moon's atmosphere.

A pair of binoculars gives the best view of a lunar eclipse, though a small telescope is nice. There is a sufficient amount of light available for the amateur to photograph a lunar eclipse and color photographs bring out the beauty of the deep red.

Time?	September 5th
1st contact	1:36 a.m. PDST
moon enters penumbra	
2nd contact	2:36 a.m. PDST
moon enters umbra	
3rd contact	3:38 a.m. PDST
moon enters totality	
Mid-eclipse	4:21 a.m. PDST
4th contact	5:05 a.m. PDST
moon leaves totality	
5th contact	6:07 a.m. PDST
moon leaves umbra	
6th contact	7:06 a.m. PDST
eclipse ends	

Plan to make your donation at Ames to support the agencies where you live. The AMES GIVERS FUND drive starts next month.

LICK OBSERVATORY PHOTOGRAPH

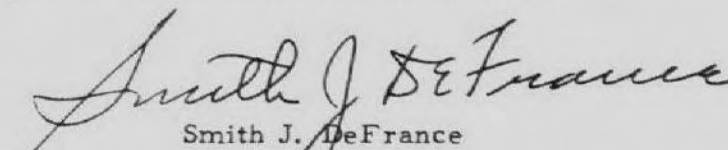
August 31, 1960

MEMORANDUM for Staff

Every American enjoys peace and the opportunity it affords to strive for the finer things in life, but peace costs money. Each Ames employee who authorizes regular savings through the Payroll Savings Plan is joining countless others who are backing the struggle to preserve our freedom.

In addition to helping pay for the costs of vigilance and peace power, bonds represent the ability to attain security and happiness for our families. Financing a new home, educating our children and preparing for a secure and pleasurable later life are some of the things Savings Bonds can mean.

I wish to congratulate the many employees here who have already joined the Payroll Savings Plan or increased their deductions as a result of this year's Savings Bond Drive. For those of you who have not yet authorized regular deductions, the current sign up campaign is a good opportunity to examine the facts regarding the new, higher interest bearing Savings Bonds. I urge you to consider seriously the information your branch representative has available. As citizens and as members of an organization whose mission is before the eyes of the world, your example will count on the side of freedom.


Smith J. DeFrance
Director

Payroll Savings Plan Bond Drive Is Underway



AMES BOND DRIVE REPRESENTATIVES--1960! These bond representatives are contacting each Ames employee in the current Savings Bond Drive. The materials they have present sound reasons why joining the Payroll Savings Plan is the sure way toward a better future. JOIN THE PAYROLL SAVINGS PLAN!



FIRST EMPLOYEE TO SIGN UP was Ellen T. Patterson, Computer in the 12-Foot Tunnel. Sharing honors in the event was Harriet E. Voorheis, bond representative, who garnered the sign up minutes after leaving the Bond Drive kickoff meeting Friday morning.



AUTHORIZATION CARDS ARE STACKING UP IN PAYROLL as the Bond Drive gathers momentum. Joseph Nicolassi, Voucher Processing Supervisor, and Dorothy Stevens, Frieda Sellers, Marian Davis and Ruth Gearing, Payroll Clerks, seem pleased at the early showing of sign ups and increases.

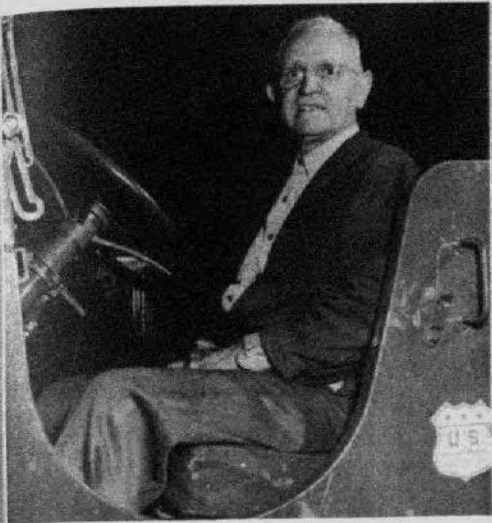


GETTING INTO THE ACT of systematic savings is Arthur D. Williams of Electronic Instrumentation Branch. Leonard J. Fairfield, Chief of EIB looks on approvingly as Virginia Strader, EIB bond representative, completes the formalities.



INSURING HIS FUTURE, Brad Wilson, Editor of the Astrogram, pens his signature on a Bond authorization form. Mildred Warren, Personnel bond representative, points the way toward convenient, never-missed savings that build interest at 3-3/4% year after year.

Ames Closeup



On June 29, 1942 Ray Loucks came to Moffett Field to enlist in the U. S. Marines and by evening he was in charge of motor maintenance here--two sedans and a two-cylinder Crosley. Notified that he was eligible for the draft, 44-year-old Loucks chose to enlist rather than wait for his greetings notice. The Marine recruiter had doubts as to whether Ray could keep up with the 18-year-old youngsters being signed up, and made his desire to get into the war effort known to Dr. De France, who was searching for a top mechanic. Not entirely unknown in this area because of his ample land holdings, memberships in several service clubs and being on the Mountain View City Council in addition to his affiliations in the automobile business, Ray was hired.

Born in Mayfield, which is now South Palo Alto, he attended local schools and worked as an apprentice mechanic until enlisting in the Army in 1917. Two days before the armistice was signed on November 11, 1918, the boat on which he was sailing to France was called back to the U. S. and he was discharged.

Ray has been a member of the Ames Cafeteria Exchange since 1944, and is currently in charge of handling supplies for special occasions.

Among his outside interests are the Plantation Restaurant which he owns, his orchards and houses in Los Altos, and the land he has leased to several oil companies.

Ray and his wife, Rilma, make their home at 70 Loucks Avenue, Mountain View.

By giving to the Ames Givers Fund, you help more than 42 welfare and youth agencies in this area!

Ames Airings

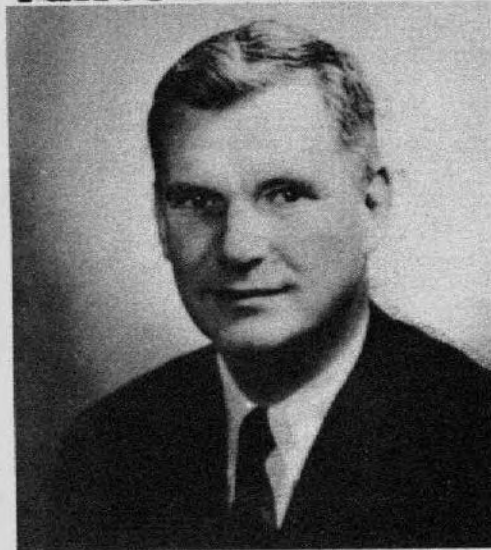
by Sharon Scharmen

FRED WITTEBORN (Physics) and wife Nancy went on a 10-day hiking trip into King's Canyon National Park. Fred started out with a pack weighing 70 lbs on his back and Nancy had 24 lbs, which fortunately got lighter as time went on. They hiked about 40 miles, hobnobbing with the wildlife. Since this was not a survival test, the total of 94 lbs contained almost all the comforts of home. Spending a few days here and there in the High Sierra country, the Witteborns came back well rested - but with sore feet!!!.....Having spent a week at Clear Lake swimming, fishing and boating, CARDY MACON (Ad. Serv.) and family returned August 8.....Bearing the proud name of "Father" just bestowed on them are CHARLES JACKSON (SSFF) who welcomed Jill Cheryl, born August 19, weighing 8 lbs, 4 1/2 ounces.

HELEN DAVIES (Pers.) returned from a 2-week hiking trip into the High Sierra, August 8. She and several other, hiked to 5 different camps, starting from Yosemite Valley. Many interesting side trips were taken to special points of beauty. The camps were on an average of 10 miles apart and all located at selected trail and fishing centers.....Planning a trip to Europe for 3 months is HANK COLE (Struc. Dyn.) who will be visiting, among other places, London, Germany, Stockholm and the Riviera. Hank will leave September 5 and will be gathering information for articles he plans to write over here.....The many friends of EMMA ROOT (Proc.) will be glad to know she is making a good recovery from the recent surgery she underwent on August 8th....

.....Busy burping their new babies are ROBERT REDMOND (SSFF) whose third child, Daniel John was born August 19, weighing 7 lbs, 6 ounces; TOM WALSH (VIR) with his new daughter, Veronica, born August 12, weighing 8 lbs, 13 ounces; and DON DAVIS (Proc.) with his new son, Blaine, born July 30.....Very enthusiastic about his recent trip to Europe is RAYMOND ISACSON (Mod. Constr.) who returned about a week ago. He visited such places as Copenhagen, Amsterdam, Holland, Belgium, Germany,

NASA Associate Administrator Takes Office



Robert C. Seaman, Jr., former chief engineer of the Missile Electronics and Controls Division of the Radio Corporation of America, assumed his new duties today as Associate Administrator of the NASA. Seamans succeeds Richard E. Horner who resigned to become senior vice president, technical, at Northrop, Inc.

ADMIRAL HANNEGAN AND STAFF VISIT AMES

Rear Admiral E. A. Hannegan, USN, Commander of Naval Air Test Center, Patuxent River, Maryland and his staff visited Ames August 24 to inspect facilities here and discuss phases of research with which he is connected. While at Ames, Admiral Hannegan and his party toured Flight and Systems Simulation Branch, the 3.5-Foot and Unitary Wind Tunnels and the Hypervelocity Ballistic Range.

Lawrence A. Clousing, Assistant Chief of Full-Scale and Systems Research Division served as host to the Admiral and his group.

Switzerland, and Monaco along with several other wonderful countries in Europe.....From the Procurement Branch--BOB DOLAN recently returned from a three-week motor tour to Yellowstone and Canada and RUTH ROBINSON took a two-week vacation in Arizona.....EMERSON SHAW (Photo) entertained a few Ames employees in his cabin at Angora Lake in the Sierra while he was on a three week vacation. PEGGY and BRUCE LARSON (Ent. Sim. & EIB), EUGENE OSBORNE (Mod. Constr.) and ELLA STALLING (Proc.) were among those who visited the Shaws at their lovely mountain setting.

— WANT ADS —

For Sale--Ironer, 17" deep, 34" wide, 37" high. Best offer. Call DA 3-9942.

Wanted--Boy's 20" pneumatic tire bicycle. Call Bob Ross, AX 6-6496.

For Sale--6 meter, 5 element, Hy-gain beam, with gamma match \$12. See Jim Gysan, 2124 University Ave., E. Palo Alto.

For Sale--German shepherd puppies born June 10, all puppy shots, purebred and AKC registered. Tan and black markings, handsome, healthy and good with children. Reasonable price. Call Marvin Kussoy, FI 1-4197 evenings.

For Sale--Slide Rule, Log Log Duplex, Decitrig, 10 in., \$10. Call Lee, AL 3-0320.

For Sale--14' runabout boat (Rockholt) 30 h.p. Johnson motor, trailer. Complete with steering controls and ski equipment. \$795 or make offer. Call "Coke" Cokeley, RE 9-9040.

Wanted--Another person from San Jose with a car to join ride group. Must be willing to drive one week out of two. Call Arthur Kaskey, ext. 224.

For Sale--6-year crib, mattress and spring and matching chest. \$45. Also double cement laundry tray. Call N. Barsi, WH 8-5968.

For Rent--1 large front room with private entrance and bath, 2 clothes closets. Available for one or two men, only 3 blocks from downtown Mountain View. \$50 for one, \$60 for two. Located at 1046 Mercy Street, Mountain View.

For Sale--Great Books of the Western World, Syntopicon, private lib. edition, with mahogany bookcase, 57 volumes, all for only \$225. Call Maines, DA 6-5638.

Wanted--Hiking companion for moonlight ascent of Mt. Whitney Sunday night, Sept. 4. Call Bill Evans, CLayburn 8-3452.

Wanted--Baby-sitter. For more information call CHerry 3-3390 after six.

For Sale--2 girls' 26" lightweight bicycles and 1 boy's 26" midweight bike, all in very good condition. Call Raby, CY 4-6441.

For Sale--1955 Ford Sunliner Convertible, R and H, power steering, power-pack. Call R. Sanders, RE 9-5682.

For Rent--2 bedroom home, wall to wall carpeting, insulated, garbage disposal, patio, large yard, 5 minutes from Moffett Field. \$110 per month. 278 Tyrella Ave., Mountain View. Call CY 5-4274.

Make your contribution to the Ames Givers Fund through your branch representative.

The ASTROGRAM, an official publication of the Ames Research Center, NASA, Moffett Field, Calif., is published bi-weekly in the interest of Ames employees. Send contributions to The ASTROGRAM -- phone 385. Deadline: Thursday between publication dates.

Editor: B. P. Wilson
Reporters: NASA Employees.

Let's Take a Holiday From Accidents

If on the Fourth of July weekend a tornado or an earthquake had swept over one of our cities killing 438 persons, it would have been considered a national disaster.

But this same death toll distributed over our national network of highways... becomes a routine story. During the July 4 holiday the highway death toll set another record. A sad record.

There is no accurate count on a nationwide basis of the number of bodily injuries inflicted through highway accidents... probably tens of thousands. Some who survived may have reason to wish they were dead.

The "Labor Day" holiday, this year, will begin about 6:00 p.m., Friday, September 2, and will continue through midnight, Monday, September 5. What will its toll be?

To halt the rising number of motor-vehicle-accident deaths, the Federal Safety Council is conducting an annual campaign aimed at alerting Federal personnel to the dangers that are ever present on the highway.

Here are a few of the dangerous risks the Council cautions drivers to avoid:

1. Trying to drive too far, too fast.
2. Driving a car that's in poor shape. (A minor auto ailment can too easily become major under the stress and strain of turnpike driving)
3. An attitude of irritation that may "drive" you into an accident.
4. Driving after drinking.
5. Ignoring speed laws, and the flow of traffic.

LET'S ALL HAVE OUR FUN BUT LET'S MAKE THIS 78 HOUR HOLIDAY WEEKEND ACCIDENT FREE!!

AMES GOLF CLUB HAS LARGE TURNOUT AT APTOS BEACH GOLF COURSE

A point-par golf tournament was held by the Ames Golf Club at Aptos Beach Golf Course Saturday, August 13. Twenty-eight members participated, making it one of the largest gatherings of the year.

Despite the fact that early morning play was made more difficult by wet turf and greens, some excellent scores were posted.

Gift certificate winners in

Ames Cafeteria Menu

WEEK OF SEPTEMBER 5

Mon. Roast Sirloin of Beef, Whipped Potatoes, Seasonal Vegetable, Ice Cream or Bread Pudding.....95¢
Vegetable Soup.....15¢

Tues. Baked Ham, Candied Yams, or Mashed Potatoes, Glazed Carrots, Green Dinner Salad, Ice Cream or Jello.....95¢
Butter Bean Soup.....15¢

Wed. Ground Chuck Steak, Fried Onions, Mashed Potatoes, Vegetable, Green Dinner Salad, Ice Cream or Rice Pudding.....95¢
Tomato Macaroni Soup.....15¢

Thurs. Grilled Cube Steak, Pan Gravy, Whipped Potatoes, Vegetable, Ice Cream or Fresh Peaches.....95¢
Split Pea Soup.....15¢

Fri. Fried Scallops, Tartar Sauce, Creamed New Potatoes and Peas, Cole Slaw, Ice Cream or Jello.....90¢
Clam Chowder.....15¢
SPECIAL--Meat Entree

WEEK OF SEPTEMBER 12

Mon. Braised Short Rib of Beef, Mashed Potatoes, Sugar Peas, Ice Cream or Jello.....95¢
Tomato Rice Soup.....15¢

Tues. Ground Round Steak, Fried Onions, Whipped Potatoes, Spanish Cabbage, Ice Cream or Fruit.....95¢
Vegetable Soup.....15¢

Wed. Italian Spaghetti and Meat Sauce, Tossed Salad, Roll, Ice Cream or Bread Pudding.....85¢
Split Pea Soup.....15¢

Thurs. Pot Roast of Beef, Butter Noodles, String Beans, Ice Cream or Fruit.....95¢
French Onion Soup.....15¢

Fri. Deep Fried Sea Bass, Tartar Sauce, Shoestring Potatoes, Assorted Vegetables or Cole Slaw, Ice Cream or Jello.....90¢
Clam Chowder.....15¢
SPECIAL--Meat Entree

Complete Luncheon Includes
BREAD & BUTTER and TEA or COFFEE

each flight were:

First Flight--1st place, R. Peterson; 2nd, G. White (tied for 1st); 3rd, R. Nysmith; 4th, A. Petretti (tied for 3rd).

Second Flight--1st place, V. Fietzer; 2nd, T. Plum; 3rd, C. Tinling; 4th, F. Follette (tied for 3rd).

The next scheduled tournament is the annual club championship meet at Almaden Golf Course on September 10. Trophies are to be awarded to the winning players in this tourney and as in past years the names of winners will be engraved on the wall plaque in the Ames cafeteria. The annual championships have always been a popular event, and keen competition is promised.

Posters announcing details of the tourney will soon go up, and members planning to attend are asked to contact Lopez, Bright or Radovich so that arrangements can be made in advance.

The Astrogram

AMES RESEARCH CENTER, MOFFETT FIELD, CALIFORNIA

VOLUME II

SEPTEMBER 15, 1960

NUMBER 24

Ames Givers Fund Drive Set for Sept. 27

The Ames Givers annual drive for contributions to support the youth, welfare, and local health agencies of your choice will be held Tuesday, September 27, 1960. As in past years, no cash will be required. Pledges only will be sought and payments may be made at later times in amounts convenient to you, the donor.

To aid you in determining the organization to which you wish to contribute, solicitors will have complete lists showing the agencies included in the Santa Clara County United Fund and the United Bay Area Crusade. Last year, Ames contributors designated 90 different organizations and groups to receive the funds donated. Funds were distributed to organizations in 26 communities as designated by the donors.

The future success of Ames Givers Fund depends on the continued support of everyone. Your "fair share" is extremely small. If you contribute one hour's pay per month (three minutes per day) you can rest assured that you have met your responsibilities.

Eugene Osborne has been designated Chairman of this year's

**THIS YEAR
EVERYBODY
GIVES!**



**Plan to Give thru the
Ames Givers Fund**

drive.

The Board of Directors of Ames Givers includes John F. Parsons, Lee W. Jones, Abraham Brass, John E. Leveen, Alan E. Faye, Virginia M. Strader, Joseph P. Nicolassi, and E. H. Schnitker, Chairman.

Dr. Dryden to Receive Cresson Medal

The Franklin Institute will award an Elliot Cresson Medal to NASA Deputy Administrator Hugh L. Dryden at the Institute's annual Medal Day ceremonies October 19 in Philadelphia.

Founded in 1848 by Elliot Cresson, Institute Life Member, the medal is awarded annually by the 136-year-old scientific and educational organization to one or more persons for discovery or original research adding to the sum of human knowledge.

Dr. Dryden is being honored for "his many scientific and practical contributions to the theory and application of aerodynamics which greatly advanced the art of wind tunnel and aircraft design, and for his guidance of and person-

al contributions to the design and development of the world's first automatic radar homing guided missile."

The Deputy Administrator, an Alternate Representative of the United States to the United Nations Committee on the Peaceful Uses of Outer Space, has written more than 100 papers on aeronautical and space research. Some of his early papers dealt with the design and development of the first glide controlled bomb called the ROBIN which was automatically stabilized and had radio control and television direction. The ROBIN made its first successful flight April 27, 1942.

The Institute will honor 24 other men from various countries the same day.

Associate Administrator to Visit Ames

Dr. Robert C. Seamans, Jr., who recently assumed the duties of Associate Administrator of NASA, will arrive at Ames Friday, September 16 on his first official visit in his new capacity.

Accompanying Dr. Seamans will be Ira H. Abbott, Director, Office of Advanced Research Programs; Major General Don R. Ostrander, Director, Office of Launch Vehicle Programs; Albert F. Seipert, Director, Office of Business Administration, and Col. D. H. Heaton, Technical Assistant to Major General Ostrander.

The Associate Administrator will confer with Ames officials and inspect facilities here during his stay.

AMES PROPOSAL AND CONTRACT INFORMATION BOOKLET AVAILABLE

The latest information on Ames procurement policies is available to interested individuals in a new booklet entitled "Selling to NASA."

Included in the booklet are chapters describing the needs of NASA for procurement of supplies, scientific and engineering studies, development programs and production; how NASA buys; contract policies and patent rights; and a directory of all NASA Research Centers.

Interested persons may obtain a copy of the booklet from Ames Procurement Office.

The bulk of Ames Givers Funds are distributed through the San Mateo County United Crusade and the Santa Clara County United Fund. However, the giver has the right to determine where his gift will go.

Astroventuring...

★ with Walt Krumm

THE MILKY WAY GALAXY

Diffuse Nebulae

The Diffuse Nebulae are great clouds of gas and dust in interstellar space. There are two varieties--bright nebulae and dark nebulae--and they form some of the most striking and beautiful objects in the sky. With one outstanding example, they are so dim that only the photographic plate can do them justice.

The faint and ghostly glow of the bright diffuse nebulae is almost without exception due to a star enmeshed in the cloud. The faint light we see from the nebulae is produced in two ways. The spectra of the nebulae are in some cases absorption spectra and in others emission spectra. If the central star in the cloud is hot enough to radiate the short wave lengths necessary to excite the gas to fluorescence we observe an emission spectra. If the central star is cooler we observe the light reflected from dust particles in the cloud much the same as sunlight is reflected from the moon. In the case of the reflected light the spectra of the nebulae is the same as that of the central star.

The dark nebulae are simply silhouettes of nebular clouds too distant from a star to become illuminated. These appear as "holes" in the sky where no stars appear. They blank out the stars behind them and the few stars that may be seen are always between us and the nebulae.

The outstanding example we mentioned at the beginning of this article is the Great Orion Nebula. This nebula is visible to the naked eye in the sword of Orion. It envelops and is illuminated by the quadruple star theta Orionis. A small telescope will display the "bat" shape of this great cloud of gas nicely. Fainter objects as M-16 and the nebulosity around the pair of stars in M-8 make for interesting viewing. It has been said that on a good dark night the dark Horsehead Nebula can be seen in Orion against its background of bright nebulae but the author has never seen this. Could be the famous "Coal Sack" might be seen by a small telescope if we were far enough south to see the constellation Crux.

There is much evidence that all of space contains some Inter-

Personnel-ly Speaking

Notes on Your Health Program

Health benefits are another step in modernizing Federal personnel administration to bring its practices into line with the best practices of progressive private industry.

* Each Federal employee has an unparalleled opportunity to choose the kind and level of health protection that best suits his situation.

* Application of the Commission's standards to carriers of the plans participating in the program insures financial stability and rates which reasonably reflect the value of the protection provided.

* Employees now know, more clearly than most of them have ever known before, exactly what their insurance protection provides.

* Several features of the Federal program are unique and will mean a great deal to employees and their families. Some of these features are: no waiting periods; no limitations on preexisting conditions; same coverage for dependents as for employees; right to continued unrestricted coverage upon retirement; guaranteed right to convert upon separation; coverage noncancellable except by employee; continued protection during periods of leave without pay.

The Civil Service Commission's mission is that of administrator of the Health Benefits Act rather than that of innovator in the health insurance field; however, there is already evidence that some of the unusual features common to all approved plans and some of the techniques employed in setting up the program may be adopted by other employers, public and private.

YOUR PARTICIPATION in Ames' contribution plan for the Givers Fund provides absolute assurance that your gift will be used to support the agencies in the community where you live.

stellar Gas. This gas is simply too tenuous and/or too remote from the stars to become illuminated and seen. The average density of this gas has been estimated at about 200 atoms to the cubic inch. A near perfect vacuum, of course, but if taken in the aggregate this amounts to a mass comparable to the stars themselves.

That there is much Interstellar Dust in space is determined in a different manner. We think of a gas absorbing light of a wave length peculiar to the gas, whereas dust absorbs all wave lengths. The "Reddening" of the stars due to distance is evidence of this dust. Any text on astronomy will give you a fascinating account of the "what" that dust in space might be. Dust too, as the gas, amounts to a comparable mass if taken as a whole.

Bright Nebulae, Dark Nebulae, Interstellar Gas, and Interstellar Dust--although we speak of them separately--are, in fact, all intermixed in space and it is only where one is more concentrated that we can tell them apart.

NACA PIONEER HOLDEN C. RICHARDSON DIES

Captain Holden C. Richardson, first Secretary of the NACA and last surviving member of the original committee, died early this month in Bethesda, Maryland.

Captain Richardson, noted Naval designer, served as NACA Secretary from 1915 to 1917. He designed the hulls for the seaplanes which made the first west-to-east trans-Atlantic flight in 1919, in addition to many other contributions to naval aviation.

THIS YEAR EVERYBODY GIVES! The Ames Givers Fund drive is scheduled for September 27.

FOOTHILL COURSES OF SPECIAL INTEREST TO AMES EMPLOYEES

Sixty-seven classes in engineering, electronics and mathematics will be offered by Foothill College during the fall semester. Courses in business and industrial management will also be given.

Evening classes in engineering drawing, electronics, transistor circuits, microwave fundamentals, mathematics, accounting, business law, computer processes and coding, business organization, planning, and control, supervisory techniques, and real estate principles are among those offered.



DRINKWATER TO PARTICIPATE IN INAC CONVENTION

Fred J. Drinkwater III, Ames Research Pilot, will represent Ames at the 24th annual International Northwest Aviation Council convention to be held at Harrison Hot Springs, Vancouver, Canada September 25, 26 and 27.

Drinkwater, who has been at Ames since 1952 and is now participating in the V/STOL program here, will speak at a luncheon Monday, September 26 and supplement his remarks with a motion picture on the X-15 Research Airplane Program. Tuesday he will take part in a VTOL aircraft panel discussion.

The Ames Givers Fund will credit your gift to the United Fund chapter in the community of your residence.

PERSHING CENTENNIAL DAY

In a recent proclamation, President Eisenhower named September 13, 1960, as General of the Armies John J. Pershing Centennial Day, marking the one hundredth anniversary of the birth of General Pershing. The day was observed with ceremonies commemorating his life.

The General, in whose honor the Pershing Missile was named, was the only officer in the history of the United States to receive the unique rank of General of the Armies.

The Ames Givers Fund's success is dependent on the continued support of everyone. Your "fair share" is extremely small. If you contribute one hour's pay per month (three minutes per day), you can rest assured that you have met your responsibilities.

FLIGHT SIMULATION TOPIC OF SEPTEMBER IAS DINNER

George A. Rathert, Jr. Assistant Chief, Flight and Systems Simulation Branch, and Captain Harold A. Smedal, MC, USN, Flight and Systems Simulation Branch, will discuss the general field of flight simulation at the monthly meeting of the San Francisco Section, IAS at Rickey's Studio Inn, Palo Alto this evening (Sept. 15) beginning at 7:30 p.m.

Mr. Rathert will outline existing simulator equipment and show the ranges of the visual and motion "cues" to the pilot and stresses which are available. The actual flight results for a variety of tasks will be illustrated by examples from current research.

Captain Smedal will describe a preliminary survey of meaningful human tolerances to acceleration levels for a pilot facing forward and flying an entry vehicle. This study was accomplished using a human centrifuge as a flight simulator and operated as a closed loop system.

The talks will be followed by a brief tour of the simulator installation here. Non-members and guests are welcome to attend the meeting.

HEALTH PLAN POLICIES REGARDING CLAIMS, CHANGE OF ADDRESS

In regard to Ames health plan policies, the Kaiser Plan office wishes to be notified of changes of address or family status immediately, and the County Medical Societies' Foundation wishes to be notified of address changes. The Blue Cross-Blue Shield and Aetna plans require no notification of change until medical care is needed, or claims filed.

Forms for the purpose of reporting changes to the Kaiser Plan office will be available in the Personnel Office, Room 109, as well as forms for claims made for out-of-area treatment.

County Medical Societies claim forms are available in the Personnel Office.

Aetna claim forms were furnished covered employees in the kit received earlier, and Aetna will supply additional forms as needed.

Blue Cross-Blue Shield members need not submit forms for basic benefits, but may obtain forms for supplemental claims from Personnel.

NASA Satellite on Display at Fair

On display in the Industrial Firm Exhibit Area at the Santa Clara County Fair is a smaller version of Echo I, communications satellite now circling the Earth.

Called "Echo's Little Brother," the NASA display is not a model but a real Earth satellite. Below the satellite, which is suspended from the ceiling of the exhibit tent, is an explanatory sign which reads,

"Since it was launched on August 12, Santa Clara County residents have had many opportunities to see Echo I, the 100-foot communications satellite of the National Aeronautics and Space Administration. The 12-foot sphere above is a smaller version of the Echo I satellite now orbiting the Earth.

"Like the bigger Echo, it is made of a plastic film called mylar, half the thickness of the cellophane on a package of cigarettes. Over the mylar a thin film of aluminum is deposited to make the sphere more highly reflective.

"For launching, inflatable satellites are folded into small packages. When in orbit, they are inflated by special chemicals to form large spheres which act as mirrors for radio waves.

"NASA's inflatable satellite program is expected to lead to improved methods of communication between all parts of the Earth. Like all NASA projects, it is devoted to peaceful purposes for the benefit of all mankind."

The Fair runs from September 12 through 18.

Your contribution can be in the form of a lump sum payment or on the installment plan... The Ames Givers Fund Drive is set for September 27.

BIKLE PRESIDENT-ELECT OF SSA

Paul F. Bikle, Director of NASA Flight Research Center, Edwards AFB, California, was elected to the Soaring Society of America presidency for the calendar year 1961 by the SSA Board of Directors at their meeting in August.

Active SSA members at Ames include Derrill H. Hansen, Construction Engineering; Richard S. Bray, Flight & Systems Simulation and Earl O. Menefee, Mechanical Engineering.

Ames Airings

..... by
Sharon Scharmen

GLEN GOODWIN (Heat Trans.) and his wife Jean, are probably having a wonderful time in Switzerland right now. They left September 1 for New York, sailing from there on September 2. Glen will be giving a paper in Zurich, Switzerland at the Zurich International Congress, from September 12 - 16. From there he is going to Stuttgart Germany to visit the Sanger Institute. Other places they will be travelling to will be Italy and Paris. They plan on spending 2 months in Europe.....

.....DICK TATE (Supply) and family recently returned from a three-week vacation that took them to Las Vegas, Zion National Park and Bryce Canyon in Utah, the Grand Canyon in Arizona, as well as Tiajuana in Old Mexico and visiting Disneyland on the way home. Dick says that Bryce Canyon was by far the outstanding at-



Ames Cafeteria Menu

WEEK OF SEPTEMBER 19

Mon. Beef Stew and Vegetables, Whipped Potatoes, Ice Cream or Fruit.....95¢
Alphabet Soup.....15¢

Tues. Meat Loaf and Spanish Sauce, Vegetable, Ice Cream or Pears.....90¢
Split Pea Soup.....15¢

Wed. Choice Pot Roast, Potato Pancakes, Vegetable and Salad, Ice Cream or Pudding.....95¢
Vegetable Soup.....15¢

Thurs. Spaghetti and Meat Sauce, Toss Salad, Vegetable, Ice Cream.....90¢
Butter Bean Soup.....15¢

Fri. Mixed Sea Food Plate, French Fries, Vegetable, Ice Cream.....90¢
Clam Chowder.....15¢
SPECIAL--Meat Entree

WEEK OF SEPTEMBER 26

Mon. Braised Sirloin Tips, Whipped Potatoes, Vegetable, Ice Cream.....95¢
Vegetable Soup.....15¢

Tues. Pork Chops, Pan Gravy, Applesauce, Mashed Potatoes, Vegetable, Ice Cream.....95¢
Chicken and Noodle Soup.....15¢

Wed. Ground Chuck Steak, Fried Onions, Baked Potato, Vegetable, Ice Cream.....95¢
Split Pea Soup.....15¢

Thurs. Top Sirloin Steak, French Fries, Salad or Vegetable, Ice Cream or Peaches.....\$1.35
Cream of Mushroom Soup.....15¢

Fri. Columbia River Salmon, Lemon, Snow Flake Potatoes, Vegetable, Ice Cream or Jello.....90¢
Clam Chowder.....15¢
SPECIAL--Meat Entree

Complete Luncheon includes
BREAD & BUTTER and TEA or COFFEE

traction of the trip.....

EMILY NEVES (ES Div.) and family returned from a five-week motor trip to New England, where they enjoyed visiting relatives and friends. Best of all were the tasty lobsters and clambakes. On the return trip they picked up another passenger in New York, Sherman McCormick, son of KATRINE McCORMICK (FSSR Div.), who had been visiting relatives. Stops were made at Hoover Dam, Zion National Park and Las Vegas on the trip home.....

JACK BONNELL (Supply) had a very successful fishing trip the latter part of August when Jack, Mrs. Bonnell and son went up to the California-Oregon border to the mouth of the Smith River. From there they went up into south Oregon to Klamath Falls, etc. and caught trout, salmon and steelhead all the way around. Jack says he found it most interesting to note that the temperature up there went as low as 20 to 24 degrees during the middle of August.....

The former CAROLE KRAMER (Fiscal) was recently wed to Ernest Fillmore of San Jose on August 20. They were married in a lovely ceremony at the First Presbyterian Church of San Jose and honeymooned in Southern California. The new Mrs. Fillmore is the daughter of ROBERT KRAMER of Unitary.....

JOE BILGRI (Supply) just returned from an extended week-end in Los Angeles where he attended a Model Aircraft "Meet". Joe is an active member of the Committee that will select "competitors" for the next European competition that will be held in Hungary.....

ROY WEILSPIEL (Supply) is resting comfortably in the Palo-Alto Stanford Hospital following a heart attack. Roy is recovering nicely after being stricken the morning of August 31st on reporting for work.....

Another convalescent of the Supply Branch is JIM BELLOMO who is recovering from surgery at the O'Connor Hospital, San Jose. Jim underwent surgery on September 6th.....

.....Sight-seeing recently in the northern country, was GORDON TITUS (Mod. Constr.) and his wife. They drove to Pyramid Lake in Nevada and Rogue River in Oregon, enjoying breathtaking scenery. Experiencing strange summer weather they ran into a snowstorm at Crater Lake. They returned August 26.....

.....HANS BRESLER (Property) recently returned from an extended vacation trip during which he and his family spent a week at Mammoth Lakes, California, hiking,

WANT ADS

For Sale--1,000 or so 7" clay flower pots of the deep type. 20¢ each. Some new and some used. Will sell in lots of five or more. Call Bob George, CH 8-6601 or Victor George, OL 5-2691.

For Sale--1959 Ford Country Sedan Wagon, R and H, W. W., Automatic Transmission. \$2100, will trade for pick up. Call AL 2-9582.

For Rent--Baby grand piano by the month, 4 months minimum. Call Bill Jones, UL 1-0554 after 10 p.m.

For Sale--1953 Olds 88, 2 door deluxe, R/H, power brakes, hydramatic. \$500 or best offer. Phone Nickle at WH 8-5167.

For Sale--ABC washer and dryer, \$125. GE washer, \$80. Call Earl Olson, CH 3-5988 after 5:30.

Wanted--Someone to share driving from Campbell area. Call Lee Seegmiller, ext. 401 or 402.

Wanted--Used table saw. Call Marvin Kussoy, FI 1-4197.

For Sale--1950 Hillman, 4 door, good transportation car. Call Nick Vojvodich evenings, YO 8-2358.

For Sale--Smith-Corona "silent" portable type writer in fairly good shape, \$15. Call H. E. Blomquist, AL 2-6229.

Wanted--Ride to and from 336 North Whisman Road (Corner Flynn Avenue) to Ames. Call Sharon Hitch, ext. 381 or YO 7-7683 after 5:00 p.m.

For Sale--1947 Studebaker pickup truck 1956 engine, 4-speed transmission, overload springs, excellent rubber, radio, heater. \$195. Call G. Edwards, ALpine 2-6038.

Wanted--Car pool from San Mateo, Belmont or San Carlos, 8:00 to 4:30 shift, Tuesday to Friday. Have car. Call Marvin Kussoy, ext. 426 or FI 1-4197.

For Sale--Good work car. 1948 DeSoto club coupe. All accessories work, \$85. Call D. R. Heinle, UN 7-9967.

Wanted--Driver to join ride group, vicinity Scott Boulevard and Saratoga Road, Santa Clara, 7:30 to 4:00 shift. Call Hans Bresler, ext. 334.

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Editor: B. P. Wilson
Reporters: NASA Employees

boating and swimming. Hans also visited Santa Barbara and Los Angeles where they went to Disneyland and Marineland.....

.....VINCE PETTINE (Pers.) and family spent a few days of his recent vacation at his beach dwelling in Rio Del Mar enjoying the sun and surf.....

Having spent 8 days at Lake Tahoe, JOE ROKOVICH (Supply) recently returned to work. He and his wife went to both the north and south shore resorts. They also visited Reno, Carson City and Virginia City.

AMES GIVERS FUND

extra!

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

The Astrogram

AMES RESEARCH CENTER, MOFFETT FIELD, CALIFORNIA

VOLUME II

SEPTEMBER 22, 1960

NUMBER 25



Nobuo Nakamatsu (HBR), Bruce Larson (VIR), Charles LaVarnway (Unit. Oper.) Assistant Chairmen and Eugene Osborne (Mod. Constr.), Chairman of the Ames Givers Drive plan their campaign for an all out effort to achieve a 100% participation. Support your charitable organization. (James Gabbard, Assistant Chairman, was absent.)

THIS YEAR EVERYBODY GIVES!

AMES THERMOMETER

The next time you go past the 40- by 80-Foot Wind Tunnel take a look at the Ames Givers Thermometer. This gage will be kept up to date and will let everyone know how well we are progressing toward our goal of 100 percent participation in the Ames Givers Drive. Remember, the drive will begin on September 27. The branch solicitors will be taking cash and pledges for charitable contributions on the 27th, 28th, and 29th of September. So PLEASE GIVE, so that Ames, you and I, can boast 100 percent participation.



The Ideal Way to Give Help

Where it is Needed

The Ames Givers Fund is the easy way, the ideal way to give. Each contribution goes directly to the charitable organization you specify. There are no administrative costs taken out of your contribution. In some charitable campaigns, administrative costs have taken as much as 49 cents out of every dollar contributed. In the Ames Givers Drive, a dollar received from you is a dollar given to charity.

Ames employees are asked to contribute to the charitable organizations represented in the Santa Clara County and San Mateo County groups. However, any organization participating in the United Fund can be specified by you in making your contribution.

The Ames Givers Fund serves only as the middleman. This drive is your opportunity to contribute either by cash or through a pledge.

Our primary aim is 100 percent participation. No financial goal has been set because each individual must determine for himself how generously he is able to share in solving the problems of youth, the underprivileged, and the needy who receive assistance from the organizations to which contributions are made.

Give your "Fair Share!"
Let's go 100 percent!

The Astrogram

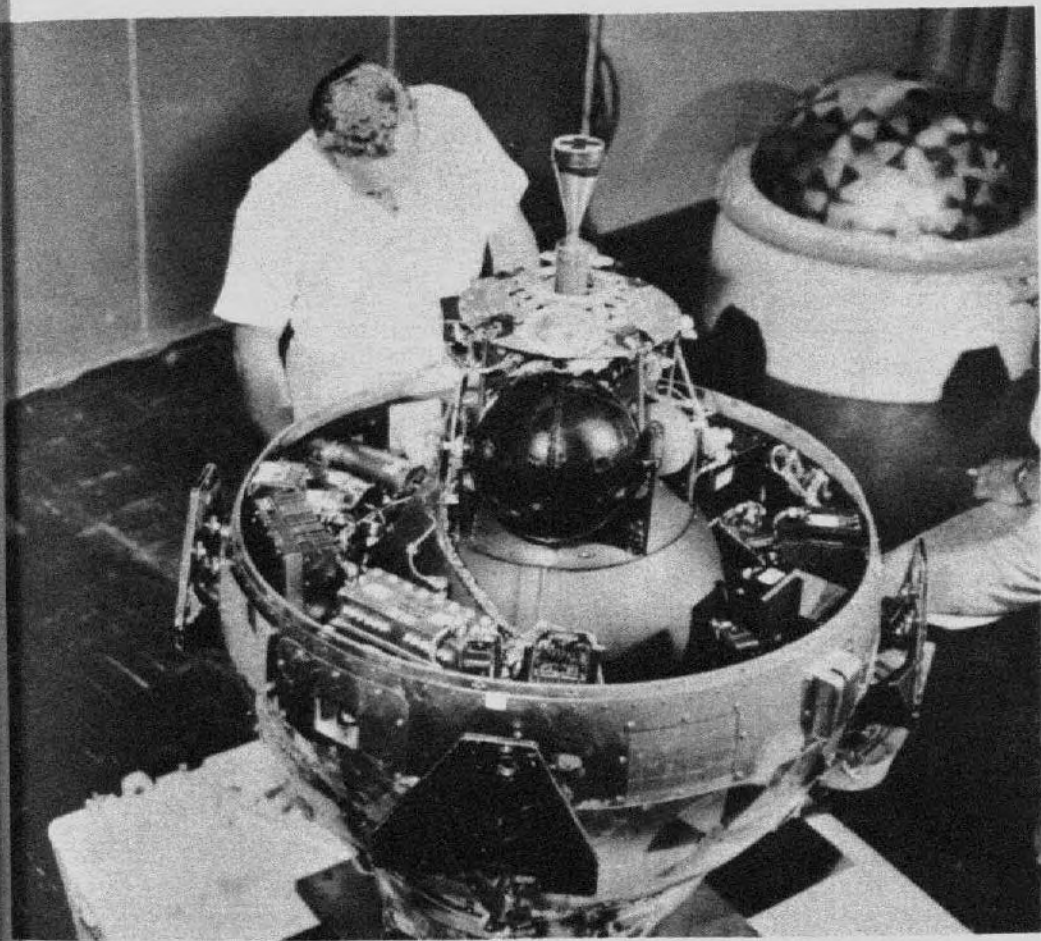
AMES RESEARCH CENTER, MOFFETT FIELD, CALIFORNIA

VOLUME II

SEPTEMBER 29, 1960

NUMBER 26

Ames Instrument Aboard Recent Space Probe Attempt



Nunn Special Assistant to NASA Administrator

Robert G. Nunn, Jr. has been appointed Special Assistant to Administrator T. Keith Glennan it was announced recently.

Nunn, who has been Assistant General Counsel at NASA, will work on policy problems related to the utilization of non-military communication satellite systems. He will report directly to the Administrator.

"The new technology of utilizing satellite systems, such as Echo, to provide needed additional global communication services is likely to produce the first practical benefit from space research for all the people of the world," said Dr. Glennan in establishing the new office. "Such benefits as ex-

panded transoceanic telephone and telegraph services and intercontinental television will require intensive effort in many areas."

Born in Cape Girardeau, Miss., Nunn earned an A.B. degree in 1939 from De Pauw University, Greencastle, Indiana, and a J.D. degree from the University of Chicago Law School in 1942.

After four years in the Army during World War II and the private practice of law for eight years in Washington, D. C. and Terre Haute, Indiana, Nunn joined the Office of General Counsel of the Air Force in 1954. He came to NASA as Assistant General Counsel in November 1958.

Pictured at left is the inside of the ill-fated Atlas-Able spacecraft which was launched Sunday, September 25 at Cape Canaveral, Florida by NASA and the Air Force. Objective of the launch was to place the highly instrumented space station in an orbit around the Moon in order to investigate more thoroughly the environment between the Earth and the Moon and to develop a technology for controlling and maneuvering a spacecraft from the Earth.

Heart of the 39-inch, 387 pound aluminum-alloy sphere was a small hydrazine engine with thrust chambers jutting from each pole. Ranged around the main hydrazine tank were the instruments which make up the payload, including the Ames plasma probe experiment.

This experiment was designed to provide direct information on the energy distribution of streams of protons with energies of above a few kilovolts per particle in the vicinity of the Moon. The radiation sensor, developed from an idea of Michel Bader's, Physics Branch, weighs only a little over a pound and consists of an electrostatic analyzer and an electrometer. Protons enter the instrument through a slit and pass through the analyzer, which allows only those of a certain energy to reach the electrometer. Current measured by the electrometer indicates the proton energies.

Ames personnel who aided Bader in the design and construction of the sensor were C. Frederick Hansen, Fred C. Witteborn, Thomas B. Fryer, Thomas W. Rutten, John Dimeff, William J. Kerwin, Leonard J. Fairfield, Dave C. Robinson, Frank DuBois, Glen Baker, and Ray Sargis.

Another attempt to launch a similar probe will be made in the near future.

Astroventuring...

★ with walt krumm

THE MILKY WAY GALAXY

In scattered areas of the sky the stars seem to form small dense groups. Not the band of stars that comprise the Milky Way itself, but apart from this, and these groups are called the--

Galactic Star Clusters

The stars that form the Galactic Clusters are, in each case, all approximately the same distance from us, quite close together in astronomical measure, moving through space at the same speed and moving in the same direction. These clusters have been likened to flocks of geese flying together through the sky toward a common destination. The separation, or distance between each star in a cluster as we view it, is an indication of the distance from us. The more widely separated the stars appear to be the nearer the cluster; the more compact the greater the distance. In fact, the Galactic Clusters are classified according to their compactness with "1" being the most widely separated to "10" the most compact.

The Pleiades, a group just to the north and west of Taurus the Bull, is probably the best known of the Galactic Clusters. This group is estimated to be about 350 light years distance and with a diameter of approximately 35 light years. Mythology has made this group popular -- the Pleiades are the seven daughters of Atlas and Pleione. On a good dark night one can count six or seven or eight of the stars by naked eye. A small telescope will show many more stars. It is estimated that there are 2000 stars in the Pleiades Cluster.

The Hyades, a group that surrounds and includes the "V" that we recognize as Taurus the Bull, is a cluster that is considerably closer to us than the Pleiades. This group -- 140 light years distant -- appears quite widely separated. The Hyades are also daughters of Atlas and half-sisters of the Pleiades.

Another of the more widely separated clusters is Coma Berenices or Berenice's Hair. This group forms a constellation and with Canes Venatici lies between the handle of the "Big Dipper" and Leo the Lion. It takes a good dark evening to see much of this

Joint AEC-NASA Nuclear Propulsion Office Established

John A. McCone, Chairman of the Atomic Energy Commission and Dr. T. Keith Glennan, NASA Administrator, recently announced the establishment of the joint AEC-NASA Nuclear Propulsion Office (NPO). The new office will consolidate the work which has been carried out by organizations in each agency to develop nuclear energy for space missions.

Harold B. Finger, Chief of Nuclear Propulsion for NASA, was named Manager of the joint office. The Deputy Manager will be Milton Klein who has been Assistant Manager for Technical Operations of the AEC's Chicago Operations Office.

The new office will be staffed by employees drawn from both the AEC and NASA. It will be located at the AEC Headquarters at Germantown, Maryland.

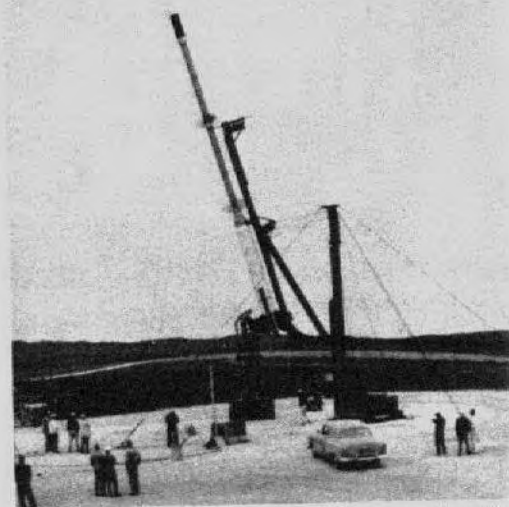
for most of the stars are 6th magnitude or less and it appears as a cloud of faint stars.

Then a couple of faint Galactic Clusters just at the edge of naked-eye visibility -- the "Beehive" or Praesepe in Cancer the Crab and the Double Cluster in Perseus the Champion. These are seen very nicely with a pair of field glasses that takes in a wide field of view at low magnifying power.

Below the naked-eye visibility and concentrated along the central line of the galaxy are the same 500 Galactic Clusters that form the "backbone" of the structure. Messier, the French astronomer, in his early catalog listed some of the Galactic Clusters which still retain his designation -- M7, M35, M67, etc.

The Galactic Clusters are of interest to the astronomer because of the age of the stars within the groups. They classify the Galactic Clusters according to age into three -- the "young" clusters with very blue stars of O and B2 spectral class, the "intermediate" clusters with stars of spectral classes B3 to B8 but with very few new stars, and the "old" clusters with no stars bluer than B8.

Many of the Galactic Clusters have nebulosity that surrounds the stars in the group. This nebulosity shows up on a photograph because of the exposure time and a picture of the Pleiades, for example, is beautiful. The Astroventurer can recall only one (M20 in Sagittarius) where the nebulosity can be seen in a small telescope.



SUCCESSFUL RECOVERY MADE

NASA launched this Argo D-8 rocket Monday, September 19 at the Naval Missile Facility, Point Arguello, California, and retrieved it 1200 miles down range Tuesday morning. The 83.6-pound NERV (Nuclear Emulsion Recovery Vehicle) nose cone reached an altitude of approximately 1200 miles in gathering information about the inner Van Allen Radiation Belt including the magnetic field of dust particles, effects of radiation upon a nuclear emulsion and the effect of impacts of small meteorites. The NERV booster was a four-stage, solid-propellant, 63-foot rocket.

NASA APPOINTS SPACE SCIENCE CONSULTANTS

NASA Administrator T. Keith Glennan recently announced the appointment of 25 outstanding scientists as consultants to NASA in five fields of space science, including Astronomy, Ionospheric Physics, Lunar Sciences, Particles and Fields and Planetary and Interplanetary Sciences.

The scientists will serve as consultants to NASA subcommittees, which in turn advise and make recommendations to a Space Sciences Steering Committee. This committee serves as a focal point for space science activities. It is responsible, among other things, for the selection of experiments for satellite and space probe payloads, and of the experimenters to provide the experiments.

"The appointment of these leading scientists as consultants provides NASA with advice and guidance from a group of men representing a very broad range of viewpoint and experience," said Dr. Glennan.

AMES GIVERS FUND DRIVE NOW IN PROGRESS



Mrs. Margaret Roberts, secretary for the "Hope for Retarded Children, Inc." in San Jose, interviews a family of one of our own fellow employees here at Ames.

The child is being prepared for entry into the Training Center. The Training Center works with approximately 30 children daily from ages 4 to 8 years. Its functions also apply to young teenagers who are retarded.

The "Hope for Retarded Children" is a typical organization that desperately needs your contribution. Under the Ames Givers Fund, the money collected goes directly to the agency that you specify.



Solicitors for the Ames Givers Fund have been contacting Ames employees for several days now receiving pledges for contributions to be made at the convenience of the donor. Have you made your pledge yet?

Remember, you can contribute to any organization you choose among those participating in the United Fund Drives. Your participation provides absolute assurance that your gift will be used to support the agencies in the community where you live.

Let's make it 100%. This year EVERYBODY gives!

Cafeteria Menu

WEEK OF OCTOBER 3

Mon. Southern Beef Stew and Vegetables, Whipped Potatoes, Ice Cream or Fruit....95¢
Vegetable Soup.....15¢

Tues. Roast Leg of Pork and Savory Dressing, Mashed Potatoes and Vegetable, Apple-sauce, Ice Cream or Pudding.....95¢
Split Pea Soup.....15¢

Wed. Beef Ravioli and Sauce, Toss Salad or Vegetable, Ice Cream or Cake.....90¢
Cream of Potato Soup.....15¢

Thurs. Ground Chuck Steak, Fried Onions, French Fries, Salad, Ice Cream or Peaches.....95¢
Butter Bean Soup.....15¢

Fri. Jumbo Fried Prawns, Hot Sauce, Scalloped Potatoes, Cole Slaw or Vegetable, Ice Cream or Jello.....95¢
Clam Chowder.....15¢
SPECIAL--Meat Entree

WEEK OF OCTOBER 10

Mon. Pot Roast, Steamed Rice, Salad or Vegetable, Ice Cream or Fruit.....95¢
Vegetable Soup.....15¢

Tues. Roast Tom Turkey, Dressing, Whipped Potatoes, Vegetable, Cranberry Sauce, Ice Cream or Cake.....95¢
Bean Soup.....15¢

Wed. Meat Loaf and Cheese Sauce, Snowflake Potatoes and String Beans, Ice Cream or Pears.....90¢
Split Pea Soup.....15¢

Thurs. Swiss Steak and Natural Sauce, Mashed Potatoes, Peas, Ice Cream or Pudding.....95¢
Cream of Tomato Soup.....15¢

Fri. Columbia River Salmon, Potatoes Au Gratin, Vegetable, Lemon Wedge, Ice Cream or Jello.....90¢
Clam Chowder.....15¢
SPECIAL---Meat Entree

Complete Luncheon Includes
BREAD & BUTTER and TEA or COFFEE



Maxine Jordan (Illus.) affixes a "Dennis" reminder over a Center clock as a reminder to employees to make their pledges now to the Ames Givers Fund. Have you made your pledge yet?

Ames Airings

.....by
Sharon Scharmen

STAN CHIMEL (Property) recently took a week's vacation and spent most of it in San Francisco. "Why travel any farther," says Stan. "Where else can you have so much fun?".....It's the third girl for CARL SORESEN (Elec.) born on September 16, weighing 6 lbs, 14 ounces. Her name is Lisa Kay.....MAMORU INOUE (Heat Trans.) left September 1 for a 2-months' tour of Europe.....One of the last bachelors in the Electrical Branch took a plunge into the sea of matrimony recently. TOM BLOOD was married to Pearlina Richard of San Jose on September 3, in Mountain View, where they are presently residing.....On the recuperation list---MILDRED WARREN (Personnel) is recovering from a "protruding disc" in her back, which laid her up about 2 weeks ago. We expect to have her back with the Personnel staff not later than October 10. ---EUGENE JESSE (Elec.) is recovering nicely from an appendectomy performed on him September 16 at the San Jose Hospital.....FRANK CLEARY (Supply) just returned from a two-week vacation and all he would talk about was "those few exciting days" he spent in Reno.....



The faraway look in the eyes of Bud Farris (40- by 80-) is the remembrance of the vacation he and his wife took in the Sierra. They pulled their 15-foot house trailer along, stopping at various lakes to enjoy the fishing. Bud says his wife is the real fisherman of the family.

NASA-DOD Board Formed

The Department of Defense and NASA have established a joint board for continuing coordination of the nation's aeronautics and space programs. Members of the board are top management personnel.

The agreement establishing the Aeronautics and Astronautics Coordinating Board provides that it will review planning to avoid duplication; coordinate activities of common interest; identify problems requiring solution by either NASA or DOD and insure a steady exchange of information.

The Director of Defense Research and Engineering and the Deputy Administrator of NASA will serve as co-chairmen. These positions are now held by Dr. Herbert F. York and Dr. Hugh L. Dryden, respectively.

Organization of the board includes a number of panels, which will identify and study problems related to space and aeronautics programs and make recommendations to the board for their solution.

KURZWEG NAMED TO ADVANCED RESEARCH POST

Dr. Hermann H. Kurzweg has been named assistant director for Aerodynamics and Flight Mechanics in the NASA Office of Advanced Research Programs. He succeeds Milton B. Ames, Jr., who was recently named deputy to Advanced Research Programs Director Ira H. Abbott.

Dr. Kurzweg, 52, was born in Germany and studied at the University of Leipzig where he received his Ph. D. in 1933. During World War II, he was chief of the Research Division and deputy director of the Aerodynamic Laboratories at Peenemuende. His work there included the design of the first 40- by 40- centimeter supersonic wind tunnel, aerodynamic research on the V-2 rocket, and the anti-aircraft rocket "Wasser Fall."

He is now a professor in the Graduate School for the Department of Aeronautical Engineering at the University of Maryland, and a Member of the Graduate Faculty.

Halloween Dance Tickets Go On Sale



The Ames Entertainment Committee's Halloween Dance, scheduled for Friday evening, October 28, promises to be a lively affair with costumes and masks the order of the night. Live music and entertainment plus food and refreshments are on tap, and informal attire will be permitted in lieu of a costume. Dancing from 8:30 p.m. until 12:30 a.m. will be held in the Ames Cafeteria. Prizes for best male and female costumes will be presented. Committee member Bob George (Struc. Dyn.) above left is selling tickets to Bonnie Ribera (Photo) and Ken Atchley (Illus.). Other members are Irv Israel (Proc. -Suply), Reception; Mike Bondi (FIR), Food; Barbara Citti (Illus), Decorations; Dick Kurkowski (9- by 7-), Program; Burt Skow (Elec), P.A. & Lighting; Jerry Hall (Struc. Fab.), Refreshments; and Hy Zimmer (AFS), Publicity.

Ames Closeup



BILL PAGE

William A. Page of Supersonic Free Flight Branch is an active participant in one of the most spectacular branches of model aviation--radio control.

A member of the Pacific Radio Control Society, he and 20 or more fellow modelers fly each Sunday at Baylands Park, Sunnyvale, on two acres of mowed turfs east of Lockheed.

Page began his radio control work in 1954 with a single channel control system which actuated the plane's rudder. As his skill and knowledge grew, he designed receivers for other modelers and to date has turned out more than fifty units. Moving up to five channel control, he built four models with rudder, elevator and engine control. Now he flies an eight channel control model with rudder, aileron, elevator and engine control. Cost of the model was approximately \$330.

The Pacific Radio Control Society, first model radio club in the western states, is made up of modelers of all ages from San Francisco to San Jose. More than \$600 of the club's funds have gone into improving the flying site to provide an excellent practice area for expert and novice alike. The land, which was donated to the club by the City of Sunnyvale, has been under their care for the past two years.

Radio Control for model airplanes was first developed by Walter Good in 1936. The sport has now expanded into an international competition in which the distance record is 55 miles and ten and twelve channels are used. The typical aircraft weighs six pounds, has a six-foot wing span and stays aloft for about ten minutes at a time. Page has built



PERSONNEL ADMINISTRATION DISCUSSION

The first two of a series of discussions related to personnel administration were held last Tuesday and Thursday by Personnel staff members. The one-hour informal talks cover Placement, Board of Examiners, Classification, Wage Surveys, Retirement and Insurance and Safety and Accident Procedures. John Leveen is pictured above as he discussed Board of Examiners procedures Thursday.

nine models in the six years he has taken part in radio control. He was club president in 1958 and 1959.

Born in San Jose, he attended Campbell schools before enlisting in the Navy in 1944. While in the NROTC program he attended Baldwin-Wallace College in Cleveland and Illinois Institute of Technology, where he studied engineering. In 1946 he enrolled at the University of California, from which he received a BS in Aeronautical Engineering in 1948 and a MS in 1949.

Coming to Ames, he worked for a time in the 1- by 3½-Foot Wind Tunnel and later in the 2- by 2-Foot. After two years in Fluid Mechanics Branch, he transferred to Supersonic Free Flight in which he is now engaged in a research project on radiation heat transfer at re-entry speeds.

Page, in addition to his duties in research, has engaged in Ames annual college recruiting program for the past two years. He has also presented papers before various assemblies, including a paper entitled "Unsteady Life on Airfoil Sections", which he gave before the Advisory Group for Aeronautical Research and Development (AGARD) last year in Brussels, Belgium.

Bill, his wife Jean, and their two boys, 10 and 6, make their home at 628 Cuesta Drive, Los Altos. As the boys grow older, trout fishing in the Sierra takes a bigger and bigger share of their free time. Jean is Secretary to the Cub Council in the Los Altos area where the boys are members. As they learn more about camping and woodcraft, Bill's flying skill will have to take a back seat to his frying skill beside a snow fed stream early in the morning when the boys bring in the fish.

Echo Progress Report

NASA scientists said recently that Project Echo's radio tracking beacons are now operating only in sunlight.

During light periods, the two 107.94 mc beacons are directly dependent on 70 solar cells carried in each transmitter assembly. The nickel-cadmium storage batteries which had powered the tracking beacons during periods of darkness have apparently failed.

The five rechargeable batteries in each transmitter began to lose their power about two weeks after launch, August 12. This caused signal "fading" which became more pronounced until the transmitters stopped operating upon entering the Earth's shadow. For the past few weeks, the satellite has been spending about 30 minutes out of each 118-minute orbit in darkness.

Wired five each in series, the chemical batteries provided a total of 6 volts for each transmitter.

The storage battery failure was probably caused by the extremes of temperature encountered by the satellite: -80°F while in darkness, and about 240°F when in sunlight.

Although the radio beacons are not operating while the Echo sphere is in darkness, it can be tracked by radar. The satellite will continue to be used in conducting communications experiments.

Radar measurements continue to show that the satellite is maintaining its spherical shape. In spite of the fact that there is a slight wrinkling in the satellite's skin, it continues to be an excellent reflector of signals.

The satellite has covered a total distance of more than 10.5 million miles around the earth.

WANT ADS

For Rent--Studio apartment, furnished, gas and lights paid. \$60 per month. Located at 333 Franklin Street, Mountain View. Call YO 8-3172.

For Rent--Unfurnished apartment with large bedroom, sunny kitchen, electric stove and refrigerator. \$105 per month. Located in Palo Alto. Adults preferred. Call Grace Webster, DA 2-1685 after 5 p.m.

Ride Wanted--For 8:00 - 4:30 shift from Los Palms Drive in Santa Clara. Call Lee, ext. 418.

For Sale--1953 Chevrolet, R & H, good transportation. Best offer. Call Larry Mauro, CY 5-7887.

For Rent--3 bedroom house, fenced back yard, walking distance of Moffett Field. Call Frieda Sellers, YO 7-7665.

For Sale--For radio hams, WRL 755 VFO, 10 thru 160 meters, \$35; UM-1 Modulator, 50 watts audio, \$25; Bandmaster Z Match, \$40. All factory wired. Vibroplex Zephyr Bug, \$10. Call Harry E. Blomquist, ALpine 2-6229.

For Sale--Complete Exakta VX outfit. \$300. Includes Zeiss f2.8 - 50 mm normal pre-set lens, Steinheil f4.5 - 200 mm telephoto pre-set lens, Steinheil f4.5 - 35mm wide angle pre-set lens. Camera body with reflex viewer. Also penta-prism and nouoflex double rack bellows attachment. All with leather cases except nouoflex. Call Earl Menefee, DA 3-9138.

For Sale--Electrostat 3 tweeter and 8 ohm crossover. \$17.50. Call J. Fitzgerald, DA 5-6069.

For Sale--Mamiyaflex C-1 professional 2 1/4 x 2 1/4 negative, with carrying case. Strobe and flash synchronization, double extension bellows, interchangeable lens. New price \$180. Will sell for \$120. Call Harry E. Blomquist, ALpine 2-6229.

For Sale--2 KLH Walnut speakers, 2 E-V Georgian 4-way Klipsch systems, Harman-Kardon Stereo amplifier setup, and Rek-O-Kut K33H turntable w/ Grado arm and Shure M7D. Plus other equipment. Call RE 9-2491

For Sale--German Shepherd puppies. Healthy, sturdy. AKC registered. Both males and females available in black and tan or black and silver. Call Roy Griffin, WH 8-3848.

Wanted--Another person from the Belmont area with a car to start ride group. Call John Arvesen, LY 3-8308.

For Sale--6-year baby crib w/innerspring mattress \$10. Fold-up stroller \$7. GE electric oven \$15. Call Frank Thompson, RE 6-5715.

Wanted--Ride from Monroe and Amethyst in Santa Clara. Shift: 7:30 to 4:00. Contact Herbert Mills, ext. 293.

Wanted to Rent--One-bedroom apartment, furnished, under \$100 per month, within driving convenience of Ames. Call Jo Daugherty, El Gato 4-1646.

For Sale--1956 Chevrolet 2-door station wagon. Very good condition. \$1050. Call Stephenson, YO 8-3961.

For Sale--1956 Ford, 6 cyl., 4-door, R&H, w/w, good condition. Call James A. Brady, RE 6-7004.

Skiers Attention--Tire chains for sale, 5.50 x 16, never used \$5. Call Emerson Shaw, El Gato 4-4736.

BOWLING

Off on another season of competition, the All-Ames Handicap Bowling League commenced activities September 8 at a new location, Mountain View's El Camino Bowl.

Bob Sheaffer, EMC highlighted the first night of competition with two 200 games and a 548 series. Bob's efforts helped place EMC in top position tied with HBR.

A newcomer to the league, Nobuo Nakamatsu, HBR, starred the following week. Nob turned in 197, 199 and 178 for a 574 series, which kept HBR in a first place tie with SSFF.

Sixteen teams compete every Thursday at 6:30 for trophies and prize money. Open to all Ames employees who enjoy bowling, the handicap league provides an opportunity for the low and the high average bowler to participate with individual trophies awarded for both scratch and handicap scores. For further information, call league secretary Charles DeRose, ext. 275.

BLOODMOBILE VISIT SCHEDULED HERE

The Santa Clara Valley Bloodmobile will visit Ames next Thursday, October 6 from 9:00 a.m. until noon.

All Ames employees who wish to donate blood may sign up on the sheet provided for that purpose in each branch office or call Betty Brady, ext. 411 for an appointment time. As before, members of an employee's family may donate Thursday also.

Blood on deposit at the Blood Center is available to all Ames personnel and their immediate families.

GOLF

The annual championship tournament of the Ames Golf Club was played Saturday, September 10 at the Almaden Golf Course. Dick Petersen (3.5-foot), who only recently joined the club, won the low gross trophy with 78. Low net score trophy went to Jim Ne-lan (Mod. Constr.) whose diligent practice sessions resulted in a gross of 83 and net of 66.

First prize trophy winners in the four flights were Paul Barisich (Mach.), Ernie Ransted (Unit. Oper.), Bert Barskey (Const. Insp.) and Ernie Medeiros (Struc. Fab.). Other prize winners were:

First Flight, F. Lazzeroni (6- by 6-) 2nd; H. Lomax (Theo) 3rd; O. Meckler (Struc. Fab.) 4th.

Second Flight, L. Graham (Fld. Mech.) 2nd; M. Radovich (Mach) 3rd; R. Nysmith (HBR) 4th.

Third Flight, T. Plum (Mod. Constr.) 2nd; G. White (6- by 6-) 3rd; R. De Los Santos (3.5-ft) 4th.

Fourth Flight, F. Gustina (Proc. & Sply) 2nd; H. DeVoto (Mech. Eng.) 3rd; R. Richardson (Adm) 4th.

The next tournament is scheduled for October 15 at Gilroy Golf and Country Club.

The ASTROGRAM, an official publication of the Ames Research Center, NASA, Moffett Field, Calif., is published bi-weekly in the interest of Ames employees. Send contributions to The ASTROGRAM -- phone 385. Deadline: Thursday between publication dates.

Editor: B. P. Wilson
Reporters: NASA Employees

POSTMASTER'S ANNOUNCEMENT

The 23rd National and International Letter Writing Week will be celebrated during the week of October 2 to 8.

A letter remains the most economical, longest lasting, and sincerest means of extending greetings, communicating social news and exchanging ideas.

During Letter Writing Week in addition to your regular correspondence, write some extra letters to friends or relatives with whom you have not corresponded in a long time. In addition, if possible, write to people in other countries as a means of promoting greater understanding among people of different nations.

The slogan for this year's Letter Writing Week is "Letters are Links to Friendship."

Let us try and make it just that.

Thank you,

C. H. CHRISTENSEN
Acting Postmaster
Moffett Field, California

The

Astrogram

AMES RESEARCH CENTER, MOFFETT FIELD, CALIFORNIA

VOLUME II

OCTOBER 13, 1960

NUMBER 27

Congressional Guests at Ames

The Honorable Albert Thomas, Representative from Texas, and Mr. G. Homer Skarin, Staff Member, House Committee on Appropriations, visited Ames Thursday, October 6 as part of their tour of NASA facilities.

Dr. Smith J. DeFrance, Director, and John F. Parsons, Associate Director, accompanied the visitors on a tour of the latest Ames equipment. They were met at the Hypervelocity Ballistic Range by H. Julian Allen and Dr. A. C. Charters, who explained the research conducted there. Mr. Thomas, who is Chairman of the House Independent Offices Appropriations Committee, appeared most interested in the speeds attainable and expressed his satisfaction at the extent of equipment obtained for the funds used.

The party continued to the Atmosphere Entry Simulator where its operation was described by Dr. A. J. Eggers, Jr. The tour then continued on to the 3.5-Foot Hypersonic Tunnel where Dr. Eggers explained the operation, and an inspection of the facility was made. Mr. Thomas seemed pleased that the tunnel was in operation so soon after the start of construction in view of the magnitude of the project.

The party then visited the flight simulation equipment, where Dr. H. A. Smedal, Stephen E. Belsley and George A. Rathert described its operation and its relationship to aircraft and spacecraft flight.

The visitors left the same afternoon for a tour of the NASA facilities at Flight Research Center and Western Operations Office.

Another recent visitor to Ames was Earl W. Cooper, Professional Staff Member of the Senate Committee on Appropriations, who is currently touring

NASA Negotiates Space Observatory Contract

Announcement has just been made by NASA Headquarters that negotiations with Grumman Aircraft Engineering Corporation, Bethpage, L.I., New York, will begin for development of a ton-and-a-half astronomical satellite.

Astronomers will use telescopes in the Orbiting Astronomical Satellite (OAO) space platform to study cosmic phenomena--X-rays, ultraviolet and infrared rays that are obscured to ground observatories by the earth's atmosphere.

Grumman proposed an eight-sided satellite, 9½ feet high and 6½ feet in diameter. The OAO spacecraft will be a standardized shell containing stabilization, power and telemetry instruments into which one or more separate experiments can be fitted for each flight. Astronomical equipment with reflecting mirrors up to 36 inches in diameter will be mounted in a cylindrical chamber running through its length.

Preliminary work on stabilization control was done at Ames utilizing a circular table balanced upon a metal sphere supported by a cushion of compressed air to simulate the friction-free environment of space. During flights the satellite will relay its position to a ground control station, which can then point it toward a star to collect data.

various NASA, AEC and independent research facilities.

He was met here by Dr. De France and Mr. Parsons Wednesday morning, September 28, and escorted by them on a tour of the Center. Visits to the 3.5-Foot Tunnel, Hypersonic Helium Tun-

(Continued on Page 4)

HBR Experiments Featured in National Magazine

The October issue of Scientific American contains an illustrated account of some of the recent discoveries made here in the Hypervelocity Ballistic Range. Author of the 10-page layout is Alex C. Charters, Chief of HBR Branch. The article reveals that at extremely high speeds metals flow like liquids during impact. The experiments, which as yet extend only a little past 20,000 feet per second, show that high-speed impact differs sharply from the process at lower speeds.

Experiments carried out by Charters and James L. Summers, HBR, showed that at low speeds a tungsten carbide sphere penetrates a massive lead target intact and makes a deep, narrow cavity like a nail hole. At a certain range of velocity the projectile no longer withstands the forces of impact and starts to either deform or shatter, depending on its hardness. Above this transition point, the crater begins to assume a hemispherical shape, as increasingly more of the projectile's kinetic energy is used to widen the crater rather than increase penetration.

In this region during the early stages of impact the forces set up are very much greater than the mechanical strength of either projectile or target. Thus, with little or no ability to resist a change in shape, projectile and target flow under the stresses of impact as though they were fluids, regardless of their hardness.

This conception of the impact process stimulated H. Julian Allen, Assistant Director, and Donald E. Gault, HBR, to investigate impact in true liquids. In one experiment their target was a tank of clear water, and their projectile a falling drop of color-

(Continued on Page 4)

HALLOWEEN DANCE DECOR TO BE FRIGHTFULLY ORIGINAL



Bill Ward, of Model Construction Branch is pictured at left casting a spell on canvas for the Halloween Dance scheduled for Friday evening, October 28, in Ames Cafeteria. Orchestras are being auditioned, an adult group of entertainers from the Beaudoin Dance Studios of Palo Alto has been hired and soloist Pamela Masters and her ukelele will provide rhythmic entertainment. Trophies for best male and best female costumes will be presented at the dance which will be held from 8:30 p.m. until 12:30 a.m.



BALANDIS BLASTS BEAR

"Bar"gain hunter BEN SHOEMAKER (Photo) selects his choice of fresh bear meat as BILL BALANDIS (Photo) makes an entry in his order book. Balandis bagged a bear

during a recent deer hunting trip in Plumas County. The firing pin of his hunting companion's rifle malfunctioned as the bruin bounced out of the brush. Balandis made a clean one-shot kill before the bear went over the mountain.

Ames Airings

.....by
Sharon Scharmen

It's not every woman who can catch a 25-inch Striped Bass and boast about it. We know of one-- OLIVE HOLWERDA (Instr.). A couple of weeks ago, she and her family were trolling out of Sausalito when this thrilling event happened. It seems that they spent a week camping and fishing in the Delta Region trying to get one of those prize catches. Of course, we all believe Olive actually did catch a fish that big, but unfortunately she ate the evidence, so we will never really know???

.....WILLIAM BREWINGTON (Struc. Fab.) and his new bride, Trudy, just returned from their honeymoon which took them to Lake Tahoe, Reno, Tijuana, Mexico, Hollywood, and Monterey. They were married in the First Baptist Church of San Jose on September 24, and are now residing in their new home at 3391 Mt. Logan, San Jose.....RICHARD HAMP (AFS) just returned from a 3-weeks trip that took him into Arizona, Las Vegas and Los Angeles.....RAY ADDISON (Mech. Instr.), who is known for the fine jewelry he makes, has had the honor of having a picture of his latest work of art on the cover of the "Lapidary Journal" in color. This is the leading magazine in the field of lapidary and jewelry and is distributed around the world. Also shown in the article featured in the magazine are two of his latest cameos.

SPACE SCIENCE SERIES SCHEDULED FOR TV SHOWING

KQED (Channel 9) has announced that a fourteen-week instructional series dealing with the space sciences is now in progress. Contributions made by Ames to the series will be shown during the weeks of October 17, October 31 and December 5.

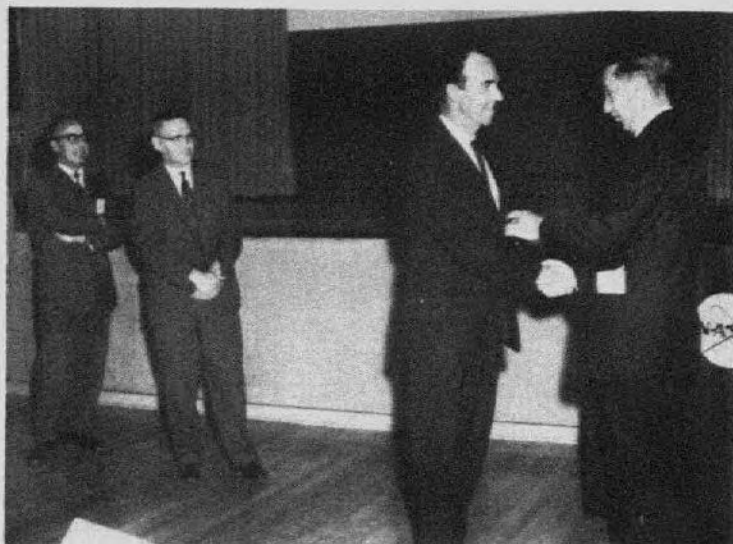
The ASTROGRAM, an official publication of the Ames Research Center, NASA, Moffett Field, Calif., is published bi-weekly in the interest of Ames employees. Send contributions to The ASTROGRAM -- phone 385. Deadline: Thursday between publication dates.

Editor: B. P. Wilson
Reporters: NASA Employees.

Honorary Service Awards Made October 4



Dr. Smith J. DeFrance, Director, discusses the award ceremonies with Russell G. Robinson, Assistant Director, and William K. Brewington, Structural Fabrication, who received their 30-year emblems.



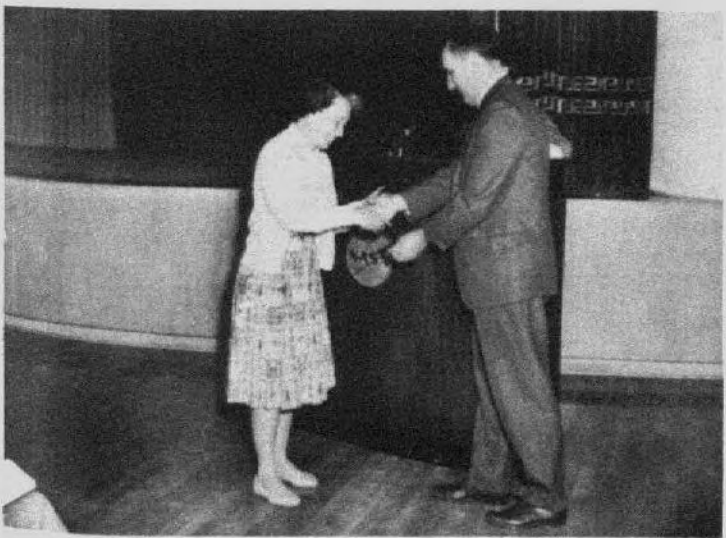
John F. Parsons, Associate Director, presents George C. Edwards, 12-Foot Tunnel, an emblem denoting 20 years of honorary service. John E. Hilquist, Mechanical Instrument, and Vincent A. Pettine, Personnel, await their turn.



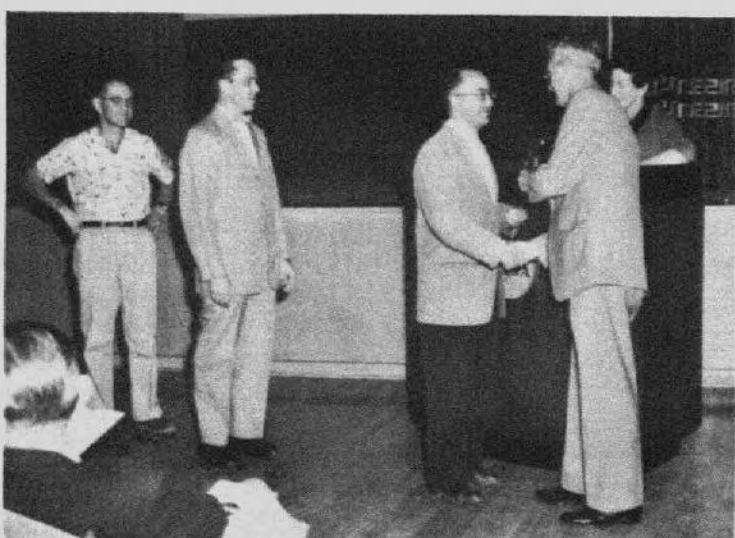
Marion Hodge, 3.5-Foot Tunnel, receives her 10-year emblem from Alfred J. Eggers, Jr., Vehicle-Environment Division Chief. Dorothea G. Mendenhall, 3.5-Foot, Louis F. Blankenburg, HBR, and Kermit L. Hinton, Entry Simulation, stand by, while Helen Davies, Personnel Officer, looks on approvingly.



An emblem representing 10 years of service is presented Mary Harley, Fiscal, by Arthur B. Freeman, Administrative Management Officer. Edward Garrity, Security, waits as Edith Elliott, Fiscal, approaches.



Barbara Dorr, Photo, was among the 10-year emblem recipients. Angelo Giovannetti, acting for Andre G. Buck, Engineering Services Division Chief, made the presentation.



James A. White, Instrumentation Division Chief, awards Stanton Golding his 10-year emblem. Harold Lagergren, EMC, and Leo Morrow, Electrical Instrument, await their turn.

WASHINGTON VISITORS....

(Continued from Page 1)

nel, Physics Branch and the Hypervelocity Ballistic Range were made prior to a luncheon in honor of Cooper's visit.

In the afternoon the party, which was joined by Russell G. Robinson, Assistant Director, made visits to the Flight Simulator equipment and the Vehicle Instrumentation Research Branch.

Cooper left Ames late Wednesday afternoon to resume his tour.

HBR EXPERIMENTS....

(Continued from Page 1)

ed water. High speed photographs revealed that at impact the crater forms, the drop flows out over its surface and a cylindrical sheath of water jets up around the crater's edge. When the crater has opened to full size, it looks much like the craters in lead and copper targets.

Motion pictures of projectiles striking granite suggest that cratering starts in the same way regardless of the target material, but that its subsequent progress is strongly affected by the material's properties.

Obviously, the tiny cavities we can make in the laboratory and the magnificent geological features formed by the impact of great meteorites differ by more than mere size. The natural structures have raised rims, like craters in ductile metals, but are wide and shallow, like craters in rock. It seems probable that gravity is partly responsible for the differences, because it is one element that our experiments do not scale correctly. It is also believed that more and more of the loose rock falls back into the crater as it increases in size.

Today the artificial satellites circling the earth are travelling through a hail of tiny meteoroids, bits of stone and iron that move at relative speeds estimated to average 50,000 feet per second, to go as high as 210,000 feet per second. Tomorrow's vehicles will carry men as well as instruments. How much weight will the designers of space ships have to waste on armor against meteoroids? These experiments are paving the way toward elimination of major areas of guesswork in the realm of space flight.

WANT ADS

For Sale--1947 Ford 2-door deluxe. Standard transmission \$90. Call Fred Drinkwater, UN 7-4259.

For Sale--Polaroid print copier, model 230, \$15. For Highlander (model 80) series Polaroid Land Cameras. Call Frank L. Gota, CL 1-2081.

For Sale--Freezer, 11 cubic feet, chest type. Will store 375 lbs of meat. \$55. Call Brooks, AL 2-7798.

For Rent--3 bedroom house, 1 bath, electric stove and refrigerator, water paid, \$125 per month. Located in Sunnyvale. Available October 16. Call Edna Thomas, CH 8-7968 after 5:00 p.m.

Lost--Skillings: Engineering Circuits. NASA copy. Call Posch, ext. 293 (no home phone).

For Sale--1950 4-door Studebaker, R & H, overdrive. Make offer! Call Posch, ext. 293 (no home phone).

For Sale--Barbecue motor and spit. Call Edie Watson, WH 8-5250.

For Sale--Electric train, Lionel, standard gauge on 4' by 8' landscaped board. For details call Norling, DI 4-4071.

For Sale--1953 Olds 88, 2-door deluxe, R/H, power brakes, hydramatic, \$395. Phone Nickle at WH 8-5167.

Wanted--To form car pool from Sunnyvale - San Juan or Alvarado area. 8 - 4:30 shift. Call Wakefield, ext. 202.

Free--Top soil dirt cheap. Come and get it. Call R. Krause, YO 7-5648.

For Sale--14' East-Craft combination ski and sail boat. 30 HP Mercury motor. Trailer. \$575. Call C. Neaves, AX 6-2674.

For Sale--Miniature Silver French Poodle puppies - AKC registered, champion stock. Call CYpress 3-2613.

Wanted--To share ride from Castlewood Tract in Cupertino, 8 - 4:30 shift. Call Joyce Yoo, ext. 339.

For Sale--1956 Chevrolet convertible, V-8 power pack engine, stick shift with overdrive. \$1200 or offer. Call Dick Petersen, WH 8-5437.

Free--Irish Setter, 4 years old, good with children, pedigree. Call Gustina, DR 9-1446.

For Sale--Equity in 1960 Pontiac Station Wagon for older paid-for car. Call Buck EL 4-1866.

For Sale--Child's outdoor gym. "Jungle Gym" cost \$28, will take \$12. Call Don Goodsell, YORKshire 8-1200.

IAS MEETING OCTOBER 20

The San Francisco Chapter of the Institute of Aeronautical Sciences has scheduled a dinner meeting for Thursday, October 20, at the Stanford Room of Rickey's Studio Inn in Palo Alto. Speaker for the meeting will be Dr. Werner R. Kirchner, Director of the Polaris Program, Aerojet-General Corporation. His subject will be "Advanced Solid Propellant Rocketry".

The social period will begin at 6:30, dinner at 7:00 and the meeting at 8:00. Dinners will be \$3.75. Reservations should be made before noon on Tuesday, October 18, by calling Bob Crane, extension 267.

AMES ENTERTAINMENT COMMITTEE MEETS, PLANS

At the last meeting of the AEC various social events were projected for the near future. In addition to the forthcoming Halloween Dance, October 28, plans for a Slide Festival, Hooby Show and Christmas Party were discussed.

Color slide enthusiasts are invited to contact Emerson Shaw, ext. 218 to sign up for a fall exhibition of color shots from the past spring and summer season of shooting.

Ames' annual Children's Christmas Party is scheduled for Saturday, December 17 from 10 a.m. until 3 p.m. This colorful event, to be held in Hangar #2, is expected to draw more than 1300 children this year. Entertainment and surprises are still in the planning stage and suggestions to the AEC regarding gifts and refreshments are invited. Send your ideas to Santa--Ames. No stamp is needed!

Interest is building up in regard to a Hobby Show next spring. Many Ames employees will recall the hugely successful show held two years ago. Call Hy Zimmer at ext. 258 for further details.

Cafeteria Menu

WEEK OF OCTOBER 17

Mon. Chicken Fried Steak, Mashed Potatoes, String Beans, Ice Cream or Fruit.....95¢
Vegetable Soup.....15¢

Tues. Beef Stew and Vegetables, Potatoes, Ice Cream or Jello.....95¢
Potato Ala Jackson Soup.....15¢

Wed. Sirloin of Beef Roast, Potatoes, Vegetables, Ice Cream or Pudding.....95¢
Cream of Mushroom Soup.....15¢

Thurs. Beef Ravioli, Italian Meat Sauce, Salad, Vegetable, Ice Cream or Baked Apple.....90¢
Split Pea Soup.....15¢

Fri. Grilled Halibut Steak, Lemon Butter, Potatoes, Vegetable, Ice Cream.....90¢
Clam Chowder.....15¢
SPECIAL--Meat Entree

WEEK OF OCTOBER 24

Mon. Short Ribs of Beef, Potatoes, Vegetables, Ice Cream or Fruit.....95¢
Vegetable Soup.....15¢

Tues. Ground Chuck Steak, Fried Onions, Potatoes, Vegetable, Salad, Ice Cream or Pudding.....95¢
Cream of Tomato Soup.....15¢

Wed. Corned Beef and Cabbage, Boiled Potatoes, Salad, Ice Cream or Peaches.....95¢
Navy Bean Soup.....15¢

Thurs. New York Steak, Potatoes, Vegetables, Ice Cream or Fruit.....\$1.35
Vegetable Soup.....15¢

Fri. Fried Eastern Oysters, Potatoes, Vegetables, Cole Slaw, Ice Cream or Jello.....95¢
Clam Chowder.....15¢
SPECIAL--Meat Entree

Complete Luncheon Includes
BREAD & BUTTER and TEA or COFFEE

The Astrogram

AMES RESEARCH CENTER, MOFFETT FIELD, CALIFORNIA

VOLUME III

OCTOBER 27, 1960

NUMBER 1

Charters Heads Section at National IAS Symposium

Dr. A. C. Charters, Chief of the Hypervelocity Ballistic Range Branch, acted as Chairman of the Hypervelocity Projection Techniques Section at the IAS National Symposium in Denver, Colorado October 19 through 21. The honor came close on the heels of the appearance of a report on high speed impact written by Charters for the October issue of Scientific American.

The three-day meet of the nation's top researchers in hypervelocity problems began with a tour of the manufacturing and test facilities at the Martin Plant in Denver Wednesday evening. Thursday and Friday reports were read before the various sections and panel discussions on hypervelocity projection and hypervelocity tunnels were made.

Major General W. S. Stone, Superintendent of the U. S. Air Force Academy, spoke before the group at a luncheon held Thursday.

EVERYBODY VOTE!

If you're eligible don't fail to vote on November 8. Polls are open from 7 a.m. to 7 p.m. (8 p.m. in San Francisco). If exceptional circumstances exist which make it impossible for you to vote outside working hours you may be granted limited excused absence as prescribed in Section 202.57 of the Ames Procedure Manual. Supervisors should consult with the Personnel Branch regarding questions on this subject.

FOOTHILL COLLEGE WILL MAKE 3-YEAR TECHNICAL CURRICULUM STUDY

Foothill College will join two other peninsula junior colleges in a study of junior college curriculums for engineering technicians. Participating in the study with Foothill are the College of San Mateo and San Jose City College.

The three-year project, sponsored by the National Defense Education Act, will be divided into three phases: (1) survey of "Engineering Technicians Personnel Employed by Industries of San Mateo and Santa Clara Counties." (2) Development of curriculums and instructional materials. Purchase and installation of equipment and evaluation of developments (3) Continued development of instructional materials and completion of instructional facilities including purchase of necessary additional equipment and supplies.

Phase 1 is proposed for the 1961-62 academic year and will involve the survey of industry. The survey will be administered cooperatively by the three junior colleges after establishing a steering committee composed of representatives from each school. A full-time consultant will be employed by San Jose City College to direct the survey. Each college will make faculty members available on a part-time basis to assist the survey director. Advisory committees and consultants from industry will be used to guide the junior college administrators and survey director in the project. The total cost of Phase 1 is \$18,890.

The objectives of this project are to determine the role of junior colleges in the training of engineering technicians, to develop instructional materials and/or needed curriculums, and to recommend appropriate facilities and equipment.

AAS Meeting Held Here Recently

The second annual meeting at Ames of the San Francisco Section of the American Astronautical Society was held last Thursday evening, October 20 in the Ames Auditorium.

Speakers at the meeting were Brad Wick, Chief of Fluid Mechanics Branch and Charles R. Nysmith, HBR. Wick's topic was "Radiative Heating of Manned Vehicles During Re-entry from a Lunar Mission," and Nysmith commented on "High Speed Impact and the Meteoroid Hazard to Space Vehicles." Both discussions were supplemented by film and slide showings.

The AAS, a national scientific organization dedicated to advancement of the astronautical sciences, promotes the knowledge of current advances through its program of technical meetings and publications.



You see above a picture of a proud man. JOE GONZALES (Trans.) holds the trophy he won for making a hole-in-one at the Hillview Golf Course in San Jose on October 15. Joe says this is the first trophy he has ever won for a feat in golf.

Astroventuring... ★ with walt krumm

THE MILKY WAY GALAXY

Globular Star Clusters
Outside the main body of the galaxy (the disc shape itself) but nevertheless, a part of the Milky Way Galaxy, lie the Globular Star Clusters, which impart to the system its overall spherical shape.

The Globular Star Clusters are recognized apart from the Galactic Star Clusters by their apparent compactness and the very great number of stars. They appear on photographs like celestial popcorn balls with the center of most unresolvable even with the larger instruments. Only one, to the Astroventurer's knowledge, can be seen by naked eye, and it (Omega Centauri) only as a dim blob of light.

The "Cluster type" variable stars in the Globular Star Clusters give a reliable distance measure and put the Globular Clusters far out. The nearest Globular is about 5,000 parsecs away. With the distance known we can determine the size and we find the Globular Clusters to be most uniform and some 60 to 80 parsecs in diameter.

With the size, distance, and brightness known (a Globular Cluster's luminosity is about 250,000), we can estimate the number of stars in the Globulars at not less than 100,000 stars as luminous as the Sun! In the Globulars then, the distance between the individual stars must be less than one light year or 1500 times as dense as the sky in the neighborhood of our Sun. Imagine a light sky with hundreds of stars as bright as our brightest star Sirius!

In spite of the compactness of the Globulars a collision between member stars is still unknown. There is still a great freedom of movement even though the Cluster itself is a permanent group. The stars do not collapse into a heap nor escape - for the Globular Clusters are thought to rotate and the centripetal forces just serve to balance gravity. This idea is supported by the "equatorial bulge" of some. It is also thought that in some the stars move in straight line orbits, rather than circular or elliptical.

Because we can see only the brightest of stars at the great distances of the Globulars and

Personnel-ly Speaking

During interviews with applicants and discussions with new employees it becomes increasingly evident that many of the attractive features of Federal Civil Service are unknown to the general public. Perhaps a review of the current benefits for career employees will surprise you, too. Let us suppose you are employed in a position at the GS-11 level, \$7560 per annum. Did you know that:

In addition to the salary quoted above, you are eligible for such benefits as:

LIFE INSURANCE

in the amount of \$8000 (double indemnity in the event of accidental death). Your contribution bi-weekly would be \$2, the Government contributing \$1.

HEALTH INSURANCE

covering major illness items and hospitalization for you and your family. Your contribution bi-weekly would be \$5.82. The Government would contribute \$3.12.

RETIREMENT PLAN

which includes credit for military service. Your contribution would be \$18.93. The Government would contribute \$18.93.

Total contributions by the Government yearly are:

Life Insurance	\$ 26.00
Health Insurance	81.12
Retirement Fund	492.18
	<hr/> \$ 599.30

You are eligible for vacation leave of 13 days per year, amounting to \$378.56. (Annual leave may be accumulated to 30 days.) After 3 years of service (including military service) employees earn 20 days of annual leave. Eight holidays a year, \$232.96.

You are eligible for sick leave of 13 days per year, amounting to \$378.56. (There is no limitation on the amount of sick leave which may be accumulated.)

GRAND TOTAL. . . . \$1,589.38

Of course, there are other benefits, such as tuition and extra leave for graduate study, which can be reduced to a monetary figure but which are dependent upon individual factors. The opportunities for professional advancement and total job satisfaction can not be reduced to a monetary figure. Adding only the total of additional benefits listed above to \$7560, the result is \$9149.38. These figures are taken from the current U. S. Government Salary tables.

because of their unique brightness-color diagrams--only the "early-type" stars are known. Some of the oldest stars known are to be found in Globular Clusters. These are almost pure hydrogen stars. Another indication of age is given by the lack of gas about the stars that we found among the Galactic Cluster stars.

Get one of your amateur astronomical friends to show you a Globular Star Cluster. An 8" or 10" telescope with about 100 power will resolve a few of these into individual stars (M22 in Sagittarius, for instance). You will be amazed at their compactness.

ACCIDENT!

Should an accident requiring ambulance service occur, don't dial operator, causing an extra delay. DIAL 400, a direct line to the Navy Dispensary. An ambulance will be dispatched promptly and precious moments will be saved.

HAVE YOU SIGNED YOUR PLEDGE?

If you were on leave during the Ames Givers Fund Drive, make it a point to contact Joe Nicolassi today and sign your pledge. The Fund's success is dependent on the continued support of everyone. Sign up now for your "fair share".

Ames Closeup



HARRIET VOORHEIS

Flower arranging has become one of the favorite pastimes of Harriet Voorheis and is opening up a new world of activity in flower show competition and exhibits. Beside winning blue ribbons, her ability in this highly artistic field is winning the admiration of the employees of the 12-Foot Wind Tunnel where she has worked since 1946. A Voorheis arrangement enhances the foyer of the Tunnel offices.

She has always enjoyed simple floral arranging but only recently the desire to learn the subtle refinements of the art led her to study arranging at night school in Mountain View and in Palo Alto under Jack Daniels, noted West Coast teacher.

Proof of her ability, native and learned, is evident in the numbers of ribbons she has won in the short time she has been entering flower shows. Recently at the Santa Clara County Fair she emerged victorious in two categories -- a blue ribbon for Best of Class, and her highest achievement to date, a gold cup for Best of Show with her entry of "Thoroughfare" for the America the Beautiful theme. Harriet, who competes in the Intermediate Class, won over the more experienced Advanced Class entrants in taking the cup.

In addition to flower arrangement, several supporting and related hobbies have attracted her attention. Beachcombing for driftwood and shells, rock-hounding, dahlia raising, color photography and mosaics are also listed among her interests. All of the materials used in her flower displays have been collected on trips to the shore and

mountains surrounding the area. Coyote Dam near Gilroy has yielded numerous examples of nature's own art which she has combined with flowers grown in her own yard to produce her attractive displays. This summer she took an 8-week course in mosaics and walked off with a first place in that field at the recent Fair with her entry of an oval bowl 30 inches long decorated in an original autumn leaf design. The tiles were cemented to a fiberglass container for electronic equipment she obtained from a friend in Mountain View. Pictures made from driftwood, bark, ferns and various stones and other materials adorn her walls. The abstract qualities of the pictures suggest scenes from various areas of California.

Her long-time interest in contests in newspapers and magazines dealing with slogans and puzzles has won for her cash prizes, a trip by air to Mexico City and a refrigerator, as well as numerous smaller prizes.

Born on a farm in the San Joaquin Valley, she may have received some artistic ability from her father who was a carriage and automobile painter. She is a graduate of Pacific Union College, and has taught in Oakland schools. After the loss of her husband in an accident when her daughter was five months old, she held various positions before coming to work at Ames as the 12-Foot Tunnel secretary. She has occupied the same space in the foyer throughout the fourteen years she has worked here, worn out one desk and is breaking in a new one.

Harriet makes her home at 117 Dalma Drive in Mountain View, where she maintains a backyard overflowing with myriad blooms and fern beds. She has recently completed landscaping her front yard and can hardly wait for the day she retires so she can go to work in earnest on her many projects and plans for the future, and spend more time with her 2-year old grandson (her favorite occupation). If you are interested in seeing a landscaping plan proportioned for a small house, drop by her home and meet this talented grandmother.

BE SURE TO

VOTE

Cafeteria Menu

WEEK OF OCTOBER 31

Mon. Ground Chuck Steak and Fried Onions, Mashed Potatoes, Peas or Spiced Beet Salad, Ice Cream or Rice Pudding.....95¢
Minestrone Soup.....15¢

Tues. Meat Loaf and Macaroni Au Gratin, Toss Salad or Vegetable, Ice Cream or Baked Apple.....90¢
Split Pea Soup.....15¢

Wed. Roast Leg of Pork, Celery Dressing, Mashed Potatoes, Green Salad or String Beans, Apple Sauce, Ice Cream or Fruit.....95¢
French Onion Soup.....15¢

Thurs. Chicken Fried Steak, Pan Gravy, Baked Potato, Buttered Carrots or Beets, Ice Cream or Jello.....95¢
Chicken Noodle Soup.....15¢

Fri. Grilled Halibut Steak, Tartar Sauce, Lemon Wedge, French Fried Potatoes, Salad or Vegetable, Ice Cream or Fruit.....90¢
Clam Chowder.....15¢
SPECIAL -- Meat Entree

WEEK OF NOVEMBER 7

Mon. Roast Beef, Whipped Potatoes, Stewed Tomatoes or String Beans, Ice Cream or Fruit.....95¢
Vegetable Soup.....15¢

Tues. Baked Ham, Choice of Potatoes, Vegetable Salad with Sour Cream Dressing, Ice Cream or Pudding.....95¢
Split Pea Soup.....15¢

Wed. Short Ribs of Beef, Macaroni Au Gratin, Salad or Vegetable, Ice Cream or Baked Apple.....95¢
Navy Bean Soup.....15¢

Thurs. Grilled Top Sirloin Steak, Baked Potato, Peas, Ice Cream or Jello.....\$1.35
Cream of Mushroom Soup.....15¢

Fri. French Fried Prawns, Hot Sauce, Vegetable, Mashed Potatoes, Ice Cream or Fruit.....90¢
Clam Chowder.....15¢
SPECIAL --- Meat Entree

Complete Luncheon Includes
BREAD & BUTTER and TEA or COFFEE

Ames Airings

.....by
Sharon Scharmen

EDEANE RAMON (Heat Trans.) took a trip to Washington and Idaho to visit some relatives during the last week of September. She found the weather beautiful all the time she was there.....DALE MARTIN (Heat Trans.) became the proud father of a baby girl, Carol Eileen, who was born on October 9, 1960.....Leaving for Tokyo, Japan on October 31 will be HARVEY ALLEN (Assistant Director) to present a paper at the Conference on Aeronautical and Space Engineering. The title of the paper will be "Problems in Atmospheric Entry from Parabolic Orbits". He plans on spending a month in the Orient visiting such places as Angkor, Cambodia and Hong Kong.

HALLOWE'EN DANCE ATTRACTIONS



Pamela Masters, singing popular and folk tunes accompanied by her ukelele, will be among the attractions at the festivities. Trophies for best male and best female costumes will be presented at the dance.



Flo and Heston Beaudoin, of Beaudoin's Dance Studios in Palo Alto, will be featured performers at Ames Halloween Dance to be held tomorrow night in the cafeteria. The Beaudoins will present exhibition tangos and novelty numbers.

Friday evening, October 28



Playing for the event will be "The Dons", led by Angelo Sparacino, accordion virtuoso. The dance is scheduled to run from 8:30 p.m. until 12:30 a.m.



Borrowed from Administrative Services for the occasion, Phyllis Gourley donned a witch's costume and flew into various Branches last week on her broom stick, publicizing the forthcoming dance. Phyllis was a nice witch, however. Her "trick or treat" bag contained goodies that she was giving away!

FLIGHT RESEARCH CENTER:



The NASA Flight Research Center at Edwards, California, conducts a variety of research and development programs in four major fields: Aerodynamics and Environmental Physics; Propulsion and Energy Conversion; Material Sciences, Structures and Operating Problems; and Mechanics of Flight. The Center has a personnel complement of about 400 persons. The 1960 operating budget shows totals of about \$3,105,000 for salaries and expenses; about \$900,000 for research and development; and about \$1,775,000 for construction and equipment. The proposed budget for 1961 reflects increases for both salaries and expenses and research and development. A decrease is seen for construction and equipment.

Called the High Speed Flight Station until September 1959, the Flight Research Center expands and compliments analytical studies with extensive flight research using as test-beds specially equipped operational and experimental aircraft. The Center, under the direction of Paul F. Bickle, is currently responsible for the conduct of a major flight research program with the USAS-

A Summary of Recent R & D Programs

(EDITORS NOTE: This is the first in a series of articles that will appear at frequent intervals in the Astrogram covering the activities of NASA installations from coast to coast).

radiation heating effects on structural temperatures of aircraft, missiles, or spacecraft. Results of this investigation will be correlated with data gained from X-15 flights.

An important area of research is implemented by the instrumentation on X-15 wing, control surfaces, and other structural components to record aerodynamic and loads data. This research is performed at the Center to provide information for use in the design of future high performance vehicles.

In a project evolved to provide meteorological data in support of the X-15 research program, the Flight Research Center has been developing an air-launched sounding rocket to survey the atmosphere at altitudes from 100,000 to 300,000 feet. Called Project ALSOR, an F-104 is used to effect a high speed launch of a 6,000-pound thrust solid propellant rocket at about 35,000 feet. Once launched, the rocket is designed to carry its 12-foot inflatable sphere payload to about 200 miles. Radar tracking of the falling balloon reveals wind velocities, temperatures, and air density.

Investigations concerned with the mechanics of flight have generated several programs at the Center during the past year. Static and dynamic simulators have been programmed to duplicate effects of high acceleration during the boost phase of multi-staged space vehicles. Results of the program show that a pilot can, using only a slight wrist motion, control the launching and flight of a space vehicle. Tests were also conducted on the suitability of various pressure suits, including the type used for X-15 flights.

As part of an overall
(Continued on Page 6)

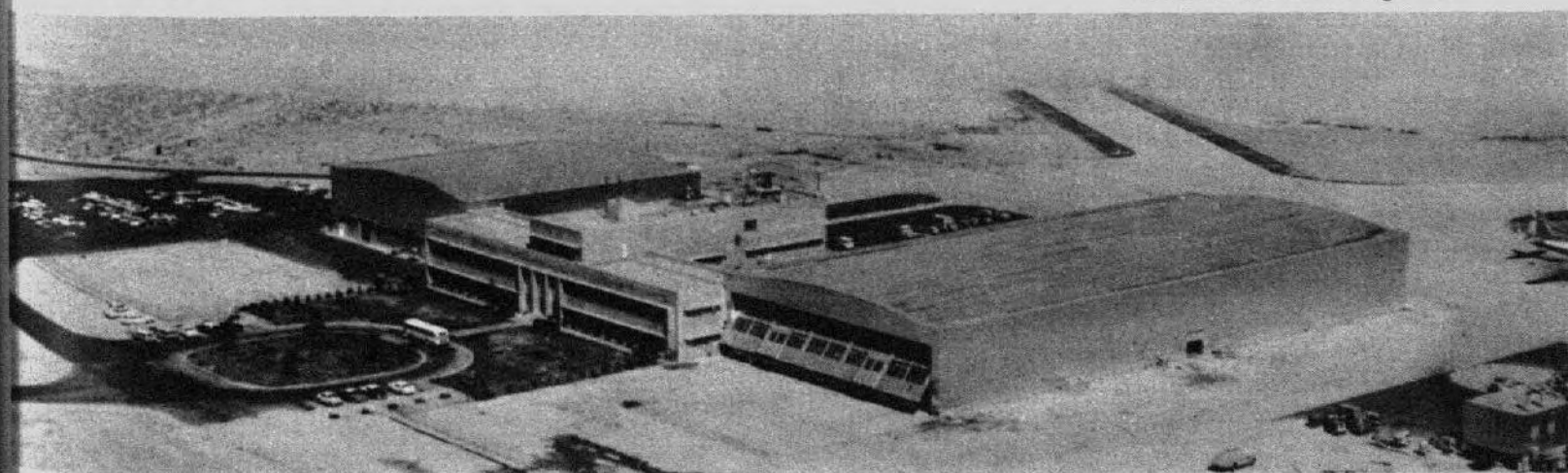
NASA-Navy sponsored X-15 manned rocket vehicles.

The X-15, designed to yield data on extreme altitudes and speeds, stands ready to make significant contributions to knowledge of aerodynamic heating, control and stability, and to a better understanding of physiological and psychological problems in a near-space environment.

A recent topic of investigation has been to establish the boundary layer noise environment at supersonic speeds. Noise level and frequencies have been measured inside a fiberglass nose cone attached to a Lockheed F-104 aircraft. Data evolved from this program may be useful in design and supersonic transports.

Tests have been made at the Center on a supersonic fighter aircraft with twin half-conical fuselage side inlets to investigate the effect of supersonic compression on an operational induction system as an aid for future designs.

Now in progress is an analytical program using automatic digital computers to provide a rapid means for the calculation of convection, conduction and



WANT ADS

Send your ads to the Astrogram through intra-Center mail. Ads cannot be accepted by telephone. Please include your home phone or address.

Wanted--Ride from vicinity of W. Olive and Mathilda, 8:00 to 4:30 shift. Call Doris Shvka, ext. 277 or REgent 9-3610.

For Rent--2 bedroom apartment, wall to wall carpet, electric kitchen, garbage disposal, 1 carport, storage space. Unfurnished - \$125, furnished - \$140. No children or pets. Call RE 9-3076 evenings or DA 3-0576 days. Apartment located in Sunnyvale.

For Sale--20-inch girl's bicycle, coaster brake, luggage carrier, 1-3/8 inch tires, good condition. \$15. Call Ernest Winkler, RE 6-4631.

For Sale--Amateur - Band NC 300 with matching speaker, XCU 300 crystal calibrator, and NC300 C2 (2 meter) converter. All are in new condition and may be tried before buying. Total combined price \$295. Call YO 8-6952 (Los Altos) evenings or weekends.

For Rent--2 bedroom duplex - new - water and garbage included. Unfurnished. Ten minutes from Moffett Field. \$110. Call YO 7-2765, after 5 p.m.

Wanted--Passenger or employees to form ride group, Los Gatos and Saratoga area. 8 to 4:30 shift. Contact Fred Bear, ext. 293.

Wanted--One or two persons to share an apartment in Mountain View area. Call Robert McPhee YO 7-4339 during days.

For Sale or Lease--2 homes in Los Altos Hills area on 6 acres of land. Either furnished or unfurnished. Large living and dining rooms, electric kitchens, located in wooded area. Guest houses available with homes. Call Mrs. Campbell WH 8-7328.

Riders Wanted--Morgan Hill to Moffett Field via Bayshore route. 8 - 4:30 shift. Call Irene Tharpe, ext. 355.

For Sale--Lionel Train "O" gauge on 4' x 8' landscaped board also triangle shaped table 44" per side suitable for youth's room or hobby room. For details call Norling, DI 4-0471.

Trade--Five books of Blue Chip stamps for 4 1/2 books of S & H Green stamps. Call D. Shute, RE 6-4514.

CORRESPONDENCE COURSES OFFERED

NASA Headquarters has entered into a Cooperative Training Agreement with International Correspondence Schools. 258 standard courses are offered through the ICS program. The agreement will enable NASA employees to enroll in these courses at reduced rates. Posters, with a supply of information cards, have been placed on all bulletin boards. Employees wanting more information about the ICS program should fill out a card and send it to Personnel. An appointment with an ICS representative will then be arranged. Watch your bulletin board for future ICS announcements.

FLIGHT RESEARCH CENTER (Continued from Page 5)

study of reaction controls, an F-104A has been equipped with a ballistic control system. The present installation is described as a proportional-acceleration command system controlled by a side-located control stick in the cockpit. Subject of a separate study is a system for controlling the attitude of an orbiting space vehicle using reaction controls or flywheels.

Possibilities of an advanced adaptive control system have been studied at the Center. The system, designed for use in the extreme ranges of dynamic pressure and Mach number covered by operational aircraft, incorporates the ability to adapt itself to a wide range of aircraft characteristics and environments while remaining independent of external environment.

Research in the field of guidance and navigation is being advanced at the Center with a simulator investigation conducted with regard to the final phases of orbital rendezvous of an unmanned supply ship with a manned space station. An objective of the investigation is to determine control, display, and navigational aid requirements for a manned space tug. Other objectives include determination of the ease of performing a manned interception and of fuel requirements.

Under the joint USAF-NASA agreement on the Dyna Soar Project, the Center has assumed the responsibility for technical direction of the project's instrumentation phase, including all measurement apparatus to be carried aboard the vehicle. General specifications for the data acquisition and processing system have been prepared. The task of implementing these plans by means of generating detailed specifications to accomplish the specific measurements is beginning.

A major project in support of the X-15 program is Project High Range, the radar and telemetry complex strategically located along the X-15 flight path. With 90 channels of data available from existing X-15 telemetry equipment, High Range Stations manned by Center personnel at Ely and Beatty, Nevada, and at the Master Control Station in the laboratory building at Edwards, monitor and record data of X-15 flights.

BASKETBALL

An Ames intra-Center Basketball League is now in the planning stages. Teams will be made up entirely of Ames personnel and will play at the Mountain View High School Gymnasium.

Interested employees are requested to attend a luncheon meeting at 12:15 p.m. in the private dining room of the cafeteria Monday, October 31. Individuals who are interested in the league but cannot attend the organizational meeting are asked to notify Harry DeVoto, ext. 235, or Dick Petersen, ext. 401.

FEMALE EMPLOYEES URGED TO SEE CANCER DETECTION FILM

Each Ames female employee is urged to join women throughout Santa Clara County in viewing next month the special free movie "Time and Two Women", the American Cancer Society's color film showing the great progress made in detecting cervical cancer before it becomes incurable. Last year 2,600 California women were stricken: 1,000 of that number died because they did not see their physicians in time.

Theaters and auditoriums throughout this area will be showing this free movie as a public service November 14, 15 and 16 in cooperation with the Santa Clara County Branch of the American Cancer Society and the County Medical Society. Time and place for film showings in your community during mid-November will be announced in the local press.

The 25-minute educational film will be accompanied by a cartoon "Inside Magoo" featuring the near-sighted Mr. Magoo and will be followed by a doctors' panel to answer questions from the audience.

The ASTROGRAM, an official publication of the Ames Research Center, NASA, Moffett Field, Calif., is published bi-weekly in the interest of Ames employees. Send contributions to The ASTROGRAM -- phone 385. Deadline: Thursday between publication dates.

Editor: B. P. Wilson
Reporters: NASA Employees.

The Astrogram

AMES RESEARCH CENTER, MOFFETT FIELD, CALIFORNIA

VOLUME III

NOVEMBER 10, 1960

NUMBER 2

Glennan Awards DeFrance 40-Year Emblem



"It is a matter of very considerable pleasure and pride to me, Smitty, to have this task of honoring you for the completion of 40 years service to the people of the United States," said Dr. T. Keith Glennan, NASA Administrator as he presented Dr. Smith J. DeFrance with an emblem signifying 40 years of Federal service at a ceremony held in Ames Auditorium on Wednesday, November 9, 1960.

Dr. DeFrance was eligible for

his forty-year award at the annual awards ceremony held on October 4. However, since Dr. Glennan had expressed a wish to present the emblem personally and his schedule did not permit him to visit Ames earlier, the presentation was postponed until this week.

Viewing the ceremony were Ames employees who have completed twenty or more years of service.

hicle now in use in the United States. The largest solid stage successfully flown in the U.S. to date is the Scout first stage which produces about 115,000 pounds of thrust and weighs in excess of 22,000 pounds.

Scout Contract

NASA recently awarded a \$6 million contract to Chance Vought Aircraft Company as prime contractor for the Scout launch vehicle system. Development of Scout was begun by Langley in mid-1958. In the second Scout launching on October 4, 1960, at

(Continued on Page 4)

Dr. Sharp Announces Retirement Plans



Newcomers and old-timers alike felt a touch of sadness at word that Dr. Edward R. "Ray" Sharp, one of NACA-NASA's best-loved Elder Statesmen, would retire at the end of 1960. Ray will bring to a close a career of nearly 45 years of Federal service, the last 18 of them as Director of the Lewis Research Center. He pointed out that shortly he will have served the nation almost two years beyond the traditional period of government career officials.

Members of the early group who were busily getting Ames underway early in 1940, remember Ray vividly as "senior officer aboard" the Ames construction shack prior to Dr. DeFrance's arrival from Langley in August of that year. He wore many hats in those days -- ranging from NACA's ambassador of good will in the Bay Area to ship's carpenter (he built the first bookshelves at Ames).

Dr. Sharp's engaging personality and abundant energy spelled success for the Lewis Flight Propulsion Laboratory from its earliest beginnings. From his

(Continued on Page 4)

NASA NEWS BRIEFS

Study Solid Boosters

NASA has selected three firms to do preliminary design studies on super-size solid fuel boosters for vehicles weighing one to seven million pounds, with booster thrust levels two to three times the vehicle weight. The firms are Aerojet General Corporation, Grand Central Rocket Company, and the Thiokol Chemical Corporation. These boosters would be many times larger and produce thrust levels far greater than any solid ve-

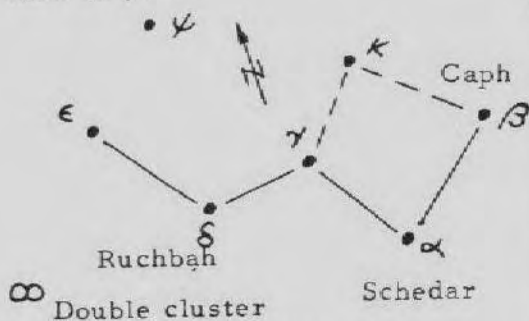
Astroventuring...

★ with walt krumm

KNOW THE SKY

A new series begins in this issue for the Astroventuring reader, in which we will introduce the constellations, one by one, as they appear on the zenith at 9:00 p.m. for best viewing. These we will describe so they may be easily found and readily recognized. A little of the mythology will be given and "objects of interest" to look for within the constellation will be mentioned.

The normal way to learn the sky is to start with the "Big Dipper" and the North Star, for most people recognize these, and work around the sky from this area, but we will start with Cassiopeia as this is in better position at this time of year.



CASSIOPEIA
(The Lady in the Chair)

Cassiopeia is recognized by a zig-zag line of 5 stars that form an "M" when viewing the constellation on the Meridian and facing north. This "M" is found about half-way along the meridian between the North Star and the zenith (overhead) for our latitude. To recognize this constellation as a chair, another star (Kappa) must be added. See sketch.

This constellation dates as far back as 3500 BC with the most famous of the legends from the Greek mythology, relating that Cassiopeia was the wife of Cepheus, King of Ethiopia, and mother of Andromeda. Cassiopeia's vanity and conceit got her into trouble for she boasted of being more beautiful than the Sea Nymphs. They in turn complained to Neptune, who chained Cassiopeia's daughter, Andromeda, to a rock on the coast of Ethiopia for the sea monsters to ravish. Anyway, Andromeda escaped as will be told later when we study this constellation, but Cassiopeia was placed in the sky in the chair that stands her on her head at times for punishment.

OBSERVE:

the field around γ with a pair

of field glasses. Cassiopeia lies in the winter Milky Way and there is much nice viewing in this area. α as a double star with field glasses. α itself (the primary of the pair) is 2nd magnitude and the secondary is 9th magnitude at 62 seconds of arc separation. Olcott lists these as red and blue.

ψ as a double star of 4.5 magnitude and 8.5 magnitude at 30 seconds of arc separation. Just below ϵ and half-way to the constellation of Perseus (south and about $7\frac{1}{2}$ degrees) look for the famous "double cluster". Two open galactic clusters in the same field of view can be seen dimly by eye on a good dark night. These are actually in Perseus but may be included in this area.

There are many other things to look at in this constellation. This is not even a partial list.

EXTERNAL GALAXIES

If we put our Milky Way Galaxy into space, as we put our Sun into the galaxy at the beginning of this series, we find the external (other) galaxies so numerous and space so vast as to be beyond comprehension.

Each of these systems, the external galaxies, are island universes differing in size and shape from our Milky Way Galaxy but similar in all other respects.

A few of these external galaxies are close enough for our large telescopes to resolve them into the individual stars within the system. And we find giant stars, normal stars, variable stars, nebula, etc. just as we did in the Milky Way Galaxy. The Magellanic Clouds in the southern skies are classed as external galaxies even though most irregular in classification. The Great Spiral in Andromeda is considered a "twin" to our own for size and shape. A photograph of this shows how vast and beautiful a galaxy is. These objects are the only galaxies visible by naked eye. All others need optical aid to be seen and most need the long exposure of the photograph to be "caught".

Within the galaxies than can be resolved into the individual stars, the astronomer finds the Cepheid Type variable stars that gives him a clue to galactic distances. The period of variation and luminosity of these stars fall right on the curve we used for these within our galaxy. Beyond this, the astronomer must rely on the brightness of the whole galaxy and its size to estimate galactic distances.

Galaxies come in all different

GRADUATE, POSTDOCTORAL FELLOWSHIPS OFFERED

As one means of promoting the progress of science, the National Science Foundation plans to award approximately 1200 graduate and 150 postdoctoral fellowships to individuals planning to undertake advanced study in the sciences during the 1961-1962 academic year. Awards will be announced on March 15, 1961. Selection of persons for fellowships will be made from among citizens or nationals of the United States solely on the basis of ability.

The fellowships will be awarded in the mathematical, physical, medical, biological and engineering sciences, as well as in interdisciplinary fields comprised of overlapping sciences such as meteorology, oceanography and biophysics.

The stipend for first year graduate Fellows will be \$1800, second year Fellows \$2000 and third year Fellows \$2200. A dependency allowance of \$500 plus \$500 for each dependent child will be granted married Fellows. The annual stipend for postdoctoral Fellows will be \$4500, with an annual dependency allowance of \$500 plus \$500 for each child for married Fellows.

Closing date for receipt of applications for graduate fellowships is January 6, 1961; closing date for postdoctoral applications is December 19, 1960. Further information is available in Personnel.

sizes and flavors. The normal classification groups them into spiral, elliptical and irregular, with subclassifications to each. Some show great amounts of nebula and obscuring matter while others are void of this and clear. The great trailing arms of the spirals indicate that they are revolving about their center.

Four billion light years is stated for the range of the 200-inch telescope, but Minkowsky recently probed to $6\frac{1}{2}$ billion light years to pick up a dim cluster of galaxies indicated by a radio astronomy survey.

As we found the stars in clusters within the galaxy, we find the galaxies in clusters or groups in space. The supergalaxy, local supergalaxy, etc., are becoming common terms in astronomical usage.

What is beyond the limits we can survey today? There is nothing to prevent us from saying --- more of the same.

Ames Airings

.....by
Sharon Scharmen
Winners of the Best Male
and Best Female costumes at the



recent Halloween Dance were Mr. and Mrs. RALPH D. SIMIN. Ralph (SSFF) was dressed as a king-size witch and his wife, Betty, in an exceptionally well made black cat costume.....Don't forget that Santa is getting ready for the Ames Children's Christmas Party, Saturday, December 17.

.....Everyone in the Machine Shop is glad to have EMMA PENDERGRAFT back at work. She had a long visit in the hospital and recuperation at home after an illness.....RICHARD GREIF (40- by 80-) and his wife welcomed a baby boy into their home on October 9. His name is Steven Michael and he weighed in at 6 lbs, 10 ounces.....As the deer hunting season is in full swing, we find many Ames employees taking advantage of it. CLEMENT LAMICA (Elec.), GIL LAMICA (Unitary), SYD JOHNSON (2- by 2-), and ED MURAWSKI (12-Foot) buzzed over to Chromo, Colorado for a week's hunting trip. They had good luck bagging 5 deer.....Gladys Saxon, wife of HARRY SAXON (Elec), was recently honored at a dinner in the Fairmont Hotel, San Francisco, for winning the Gold Medal Follett Beginning-to-Read Award for 1960. The name of the award winning book is "The Hole in the Hill". It is the story of a stone age family adopting "dog" as their first pet. The book is designed to amuse young readers while increasing their reading skills. Gladys writes under the name of Marion Seyton. She started writing for children in 1950, having written

Ames Film Production Receives Honors

"Chemistry of Meteor Vaporization", live action color film with C. Frederick Hansen, Chief of Physics Branch, recently received the honor of being recommended for possible entry in the 1960 Venice Film Festival by the Government Interdepartmental Committee on Visual and Auditory Materials for Distribution Abroad.

The film, which also was recommended to be exhibited before the organizing committee of the American Science Film Association, contained animated sequences drawn by Harry DeVoto, Illustration, and was technically supervised by Fred Swartz, Chief of Photo Branch.

articles for science and educational journals and general magazines, previously.....OLGA THOMPSON (Fiscal) recently returned from a month's trip to Pittsburg, Pennsylvania where she visited with relatives. She left, by jet, October 2, arriving in Chicago only to miss the plane scheduled to take her on to Pennsylvania. Because of this, she had an opportunity to ride in a helicopter from one airport to another to get a plane. A never-to-be-forgotten event she witnessed in Pittsburg was when the city "went wild" after the Pirates won the World Series. Olga says she had a wonderful trip, but it is so nice to be home.....



Scheduled to return tomorrow from an extensive two-week training exercise in Port Lyautey, Morocco, is Navy Reservist Myron G. Smith (Unitary), who, along with nearly 200 Bay Area civilian-sailors participated in distributing one and one-half tons of food donated by the non-profit "Meals for Millions Foundation", to the needy of Morocco.

Cafeteria Menu

WEEK OF NOVEMBER 14

Mon. Pot Roast of Beef, Snowflake Potatoes, Salad, Vegetables, Ice Cream or Cake.....95¢
Vegetable Soup.....15¢

Tues. Meat Loaf and Spanish Sauce, Oven Brown Potatoes, Vegetables, Ice Cream or Peaches.....90¢
Split Pea Soup.....15¢

Wed. Swiss Steak and Natural Sauce, Whipped Potatoes, Salad or Vegetable, Ice Cream or Pudding.....95¢
Butter Bean Soup.....15¢

Thurs. Chuck Steak, Fried Onions, Potatoes, Salad or Vegetable, Ice Cream or Fruit.....95¢
Soup.....15¢

Fri. Fish Sticks, Tartar Sauce, Cole Slaw, Potatoes, Ice Cream or Jello.....90¢
Clam Chowder.....15¢
SPECIAL --- Meat Entree

WEEK OF NOVEMBER 21

Mon. Ham Steak, Raisin Sauce, Candied Yams, Salad and Vegetable, Ice Cream or Fruit.....95¢
Vegetable Soup.....15¢

Tues. THANKSGIVING SPECIAL...\$1.35

Wed. Raviolis, Meat Sauce, Grated Cheese, Tossed Salad or Vegetable, Ice Cream or Fruit.....90¢
Split Pea Soup.....15¢

Thurs. HOLIDAY

Fri. Fried Scallops, Hot Sauce, French Fries, Salad, Vegetable, Ice Cream or Jello.....90¢
Clam Chowder.....15¢
SPECIAL --- Meat Entree

Complete Luncheon Includes
BREAD & BUTTER and TEA or COFFEE

Earhart Scholarships

Zonta International's annual \$2,500 Earhart Scholarships have been announced for the 1961 school year. Established as a memorial to Amelia Earhart, world-famous air pioneer who disappeared in 1937 in an attempt to circle the globe at the equator, the grants are offered to qualified women for advanced study in aeronautical fields.

A bachelor's degree in a science qualifying a candidate for graduate work in aeronautical engineering or space physics, in a college of her choice and approved by Zonta's special scholarship committee, is the basic requirement along with evidence of exceptional ability and personal character.

Candidates can obtain further information about the Amelia Earhart scholarship grants from Zonta's headquarters office, 59 East Van Buren Street, Chicago 5, Illinois, or direct from the chairman of Zonta's Amelia Earhart scholarship committee: Dr. Helen Pearce, 490 Oak Street, S.E., Salem, Oregon. Deadline for filing applications is February 15, 1961.

NASA NEWS BRIEFS..... (Continued from Page 1)

Wallops Island, Virginia, all phases of the vehicle performed as programmed. The rocket had a ballistic trajectory of 5,800 statute miles down the Atlantic Missile Range and peak altitude of about 3,500 miles. Scout is the first all-solid propellant vehicle with an orbital capacity.

Astronauts Program

Project Mercury's seven astronauts recently completed the third training program at the Navy's human centrifuge facility at Johnsville, Pennsylvania. This program provided the astronauts with acceleration experience for a normal Redstone suborbital manned space flight. Manned flights utilizing the Redstone booster are programmed for early 1961. Each astronaut has taken as many as 16 G's, about the highest G load which could be encountered in a Mercury flight.

MAIL EARLY

With the Christmas Season closing in fast, the Post Office Department is again urging the public to mail packages early to the Armed Forces overseas.

Ordinary parcels (surface mail) should be mailed no later than November 20, 1960. Air parcels should be mailed before December 10.

Keeping these dates in mind will assure the addressee of his mail for Christmas.

C. H. Christensen
Acting Postmaster
Moffett Field, Calif.

FRANK LAZZERONI "EARLY BIRD" STUDENT AT SANTA CLARA

Frank A. Lazzeroni, research engineer in the 6- by 6-Foot Tunnel, is currently attending "early bird" classes in the college of engineering graduate program at University of Santa Clara.

The first Ames employee to take advantage of Santa Clara's early classes, which are held from 7 - 9 a.m. weekdays, Lazzeroni is participating in the Ames Graduate Study program, which pays him for the time he is away from his duties here.

Approximately sixty Ames engineers are enrolled in classes

DR. SHARP RETIRES..... (Continued from Page 1)

office at Langley, Ray supervised the planning and construction of Lewis' first facilities and then, in 1942, moved to Cleveland where he has made his home since.

Under his direction, Lewis served the nation well during the World War II period and thereafter. Lewis contributions to piston engines greatly improved the performance of both the fighters and bombers of that period, and civil aviation, burgeoning after the war, inherited many of the benefits of Lewis research.

As early as 1945, Dr. Sharp's scientific staff were at work on nuclear propulsion studies, and research into high energy rocket fuels began in 1947.

From such well-prepared foundations, Lewis was ready to aid the nation's push into space, and today, the Lewis Research Center is making important propulsion contributions to Project Mercury, Centaur, Saturn and many others. NASA scientists there have been most active in investigating new and unusual methods of space propulsion, including the electrical or ion engine. The newest adjunct of the Lewis Research Center, the Plum Brook research facility at Sandusky, Ohio, is rapidly nearing completion and will soon begin work on rocket and nuclear engine problems.

Dr. Sharp is an Alumnus of William and Mary Law School and a member of the Bar of the State of Virginia. He is a Fellow of the Institute of the Aerospace Sciences, the Canadian Aeronautical Institute, the Royal Aeronautical Society, and other scientific organizations. He was president of the Institute of the Aerospace Sciences in 1956.

During World War I he served overseas aboard ship with the U. S. Navy and was retired from the Reserve as Lieutenant Commander.

In 1947 President Truman awarded him the United States Medal for Merit. Other honors include the Degree of Doctor of Science from Case Institute of Technology in 1948, a Distinguished Service award from the Cleveland Technical Societies Council and a Doctor of Engineering degree from Fenn College, both in 1958.

at Stanford University and twenty are enrolled at San Jose State College in classes which are designed to aid professional development and increase the individual's research potential.

Want Ads

Send your ads to the Astrogram through intra-Center mail. Ads cannot be accepted by telephone. Please include your home phone or address.

Wanted--Ride from 134 E. Reed Street, San Jose (corner of 4th and Reed). 8 to 4:30 shift. Call Mary Harley, ext. 308.

For Sale--1949 2-door Roadmaster, R & H, w.w. tires, dyna flow, 37,000 original miles, excellent condition. Call Burt Skow, AX 6-9144.

Wanted--One or two persons to share an apartment in Mountain View area. Call Robert McPhee YO 7-4739 during days.

For Sale or Lease--2 homes in Los Altos Hills area on 4 acres of land. Either furnished or unfurnished. Large living and dining rooms, electric kitchens, located in wooded area. Guest houses available with homes. Call WH 8-7328.

Wanted--To share ride from Fremont area, 8 - 4:30 shift. Call Jean Cook, YO 7-6961, ext. 313.

For Sale--Hi Fi 12-15 W. amplifier, compact bookshelf type ideal for stereo. \$25. Call WH 8-6378.

Lost--Book entitled "A Short Table of Integrals". Author - B. O. Peirce. If found, please return to Masato Yoshioka, Mech. Eng.

For Rent--1 bedroom duplex, unfurnished, electric stove and refrigerator, water and garbage paid. Carport. No children or pets. \$85 per month. Located in Mountain View. Call YO 8-0388 after 5 p.m.

For Rent--Room with bath, within 3 blocks of Valley-Fair in San Jose. Call Helen Drew, AX 6-6217.

For Sale--Occidental gas stove, 4 burner, grill, double oven, clean and in excellent condition. \$55. Call DA 3-0194.

For Sale--B-flat Bettoney-Century clarinet. Dura-nyl. 1 1/2 years old. \$75. Call Reller YO 7-7459.

Wanted--To rent 3 bedroom house in Mountain View area. 3 unmarried men, two of whom are employees at Ames and a third at Lockheed. Price range around \$125 per month. Call Bob George, John Caldwell, or Vick Amerio at CH 8-6601 after 5:15 p.m.

For Sale--Station Wagon, 1956 V8 Chevrolet. Radio, heater, w.w. tires, automatic transmission. Call Al Clarke, WH 8-5537.

Wanted--Drivers or riders from Melody Park through San Jose on 12th, 13th streets, 8 - 4:30 shift. Call Bill Leak, ext. 424 or CY 7-6863.

Wanted--Basketball referees with some experience to referee Ames League. Two games each Tuesday night, \$1 per game. Call R. Petersen, ext. 401.

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The Astrogram

AMES RESEARCH CENTER, MOFFETT FIELD, CALIFORNIA

VOLUME III

NOVEMBER 23, 1960

NUMBER 3

Thompson Named Acting Director of Public Information

Shelby Thompson has been named Acting Director of NASA's Office of Public Information. In announcing the appointment, Dr. T. Keith Glennan, Administrator of NASA, said Thompson will continue in his present capacity as Director, Office of Technical Information and Educational Programs. Dr. Glennan added that the two NASA information offices will be maintained as separate organizations without change in their personnel or functions.

Thompson succeeds, in an acting capacity, to the position formerly held by Walter T. Bonney, who resigned to become Director of Public Information, Aerospace Corporation, El Segundo, California. Thompson came from the Atomic Energy Commission to the NASA last May 31 to become Director of the Office of Technical Information and Educational Programs when that office was created.

Three Firms to Study Project Apollo

NASA has selected three contractors to conduct individual feasibility studies of an advanced manned spacecraft as part of Project Apollo.

Project Apollo is the name given the next development effort in manned spacecraft after Project Mercury. Three studies are being made to provide a variety of viewpoints. The firms selected from among those which submitted proposals are: Convair Astronautics Division of General Dynamics Corp.; the General Electric Missile and Space Vehicle Dept. and the Martin Co.

Project Apollo plans call for a versatile spacecraft that will greatly extend man's capabilities

Ames Receives National Safety Award



The National Safety Council's Award of Merit was recently presented to Ames in recognition of the operation of 1,697,374 man-hours without a disabling injury from February 3, 1960, to August 31, 1960.

John F. Parsons, Associate Director (right above), and Les Briggs, Safety Officer (center), received the award on behalf of Ames employees from David Kaye, Managing Director, Santa Clara County Chapter of the National Safety Council. The plaque, shown above and symbolizing the award, has been placed in the main hall of the Administration Building. Since the period for which the award was made, Ames employees have boosted the total number of disabling injury-free hours well over the 2,000,000 mark.

to explore and experiment in space.

It will provide the capability for manned reconnaissance flights to the vicinity of the moon, as a logical step toward future goals of landing scientific teams on the moon and exploration elsewhere in the solar system.

Project Apollo's proposed multi-mission capability will include a variety of scientific, technological and civilian services as an earth orbiting vehicle. It also will serve as an intermediate step toward the establishment of manned space stations.

The feasibility studies have four basic objectives. First, the

study is intended to define a manned spacecraft system meeting the mission requirements. Definition in this case will include preliminary performance, systems requirements and reliability goals to the extent possible.

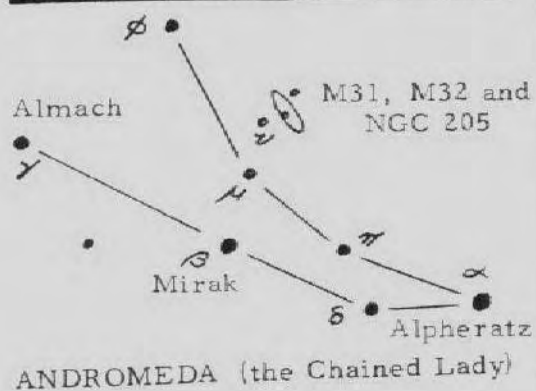
Secondly, the study should result in a proposed program plan for implementation. Such a program plan would relate the time, costs, and facilities required for design, development, fabrication, qualification and reliability testing and a flight test program.

A third objective requests the identity of technical areas that might demand long leadtime for re-

(Continued on Page 4)

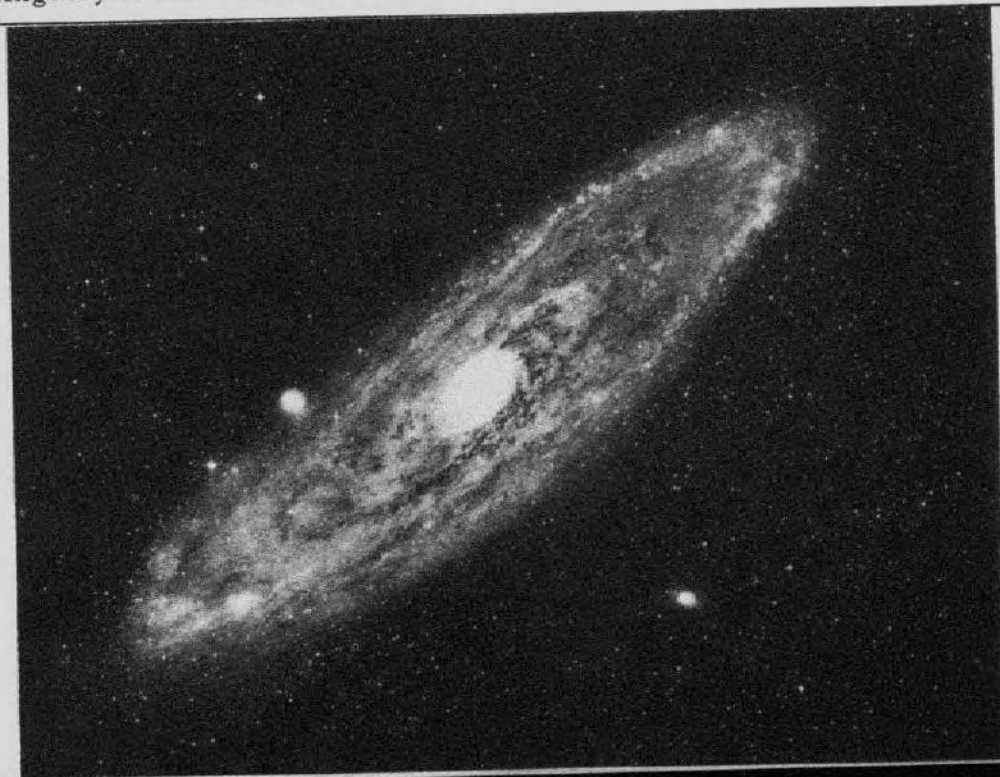
Astroventuring...

★ with walt krumm



Running almost east and west and right overhead you will find a line of 5 stars, nearly equally spaced and four of which are second magnitude. The westernmost of the five is Alpheratz (α And.) and is common to the "Great Square" of Pegasus (the N.E. corner star of the square). The last of the five is Algenib (α Per.). Stretched in between one finds Andromeda. For the rest of Andromeda, observe another line of fainter stars further north that gives Andromeda its curved "V" shape with α And. at its apex.

According to legend, Andromeda was the beautiful daughter of Cepheus the King and Cassiopeia the Queen, who was chained to a rock on the Ethiopian seashore because of her mother's vanity and conceit and boastfulness. (Seems a round-about-way of punishing Cassiopeia). But, just as the villain (the monster) was about to seize our darling (Andromeda), the hero (Perseus the Champion) flew down and rescued her in a fantastic manner. (Read Charles Kingsley in his "Greek Heroes").



Ames Airings

.....by
Sharon Scharmen

One of the largest chess tournaments in this state was held from November 11 through the 13th at the Palo Alto Clinic Auditorium, sponsored by the Palo Alto Junior Chamber of Commerce. The winner of the special Sunday tournament was FRANK HAMAKER (ES). There were some 130 players, including 4 other Ames employees, namely, DEWEY HAVILL, JERRY HAVILL, KEITH MCFARLAND, and JAMES WOODRUFF.....Two new fathers at Ames are: John Easley with a baby girl born on November 2, named Teresa Marie and weighing 7 lbs., 4 1/2 ounces; and RICHARD WEICK (FSS) with a new baby girl born October 27, weighing 5 lbs., 12 ounces, named Caroline.....A request has been made by the employees in the Electrical Branch and Electronic Instrument Branch for those of you who address intra-Center envelopes to either of these two places to please write the names out. It seems that many of us are

Alpheratz was known to the Arabs as "The Head of the Woman in Chains". Mirak "the girdle". Almach "a badger" or possibly "the boot".

Observe the Great Andromeda Nebula (see accompanying picture) - this is just observable by eye on a good dark night, very nice in a small telescope and the most outstanding feature of this constellation. Known as M31, in Messier's catalog, the Nebula is a spiral galaxy

writing "Elec" for both of the branches and their mail is getting mixed up the majority of the time. It would be very much appreciated if you would help out in this small way.....JEANNE NEALE (Elec.) fell on the back stairway of her home, Tuesday evening, November 15, receiving minor leg bruises. Jeanne had just finished reading a SAFETY MAGAZINE and had consequently decided to clean up the leaves in her back yard for SAFETY'S SAKE when the accident occurred!



THE DAY AFTER ELECTION

with M32 lying just behind at a great distance. In the same field of view, observe NGC 205, another nice galaxy.

γ And. is a beautiful pair of stars - one yellow and one blue - but it needs a small telescope to see it for the separation is 10 sec. arc.

#56 is a field-glass double, magnitudes 6 and 5.8 at 181 sec. arc. If these were a bit brighter we could see them by eye but they take the small light gathering power of the field glass.

In our study of the sky it might be well to mention that:

The constellation names are primarily Latin and if we are indicating a specific star, the constellation name takes on the genitive ending--e.g., Alpheratz, α Andromedae or Caseor, Geminorum.

The star names are, for the most part Arabic--Alpheratz Hamal or Zuben Elgenubi (α Lib.) etc.

The stars are designated by small Greek letters or numbers. The nebulae are designated by N.G.C. numbers or Messier's "M-numbers".

This is not hard and fast, for
(Continued on Page 3)

Christmas Party Plans in Progress



Pictured above is the Ames Entertainment Committee ordering toys from Santa for the annual Children's Christmas Party to be held this year on December 17 at Ames. Clare Doolin, daughter of Brian Doolin, Guidance and Control, is shown at left admiring Patty Play Pal, the life-size doll to be given away at the party.

"TINKERBELL" NOMINATIONS BEING ACCEPTED BY AEC

Nomination blanks are now available in each branch for entering the names of candidates for Tinkerbell, the magical fairyland character who assists Santa each year at the Ames Children's Christmas Party. In charge of presenting the children with gifts as they tour the displays, Tinkerbell is a most popular attraction at the annual event, to be held this year Saturday, December 17. Last year Tinkerbell was portrayed by Ronni McCoy, Security Office. Entries should be in Santa's office, care of Hy Zimmer, no later than November 28, 1960. Pictures will be taken of

Astroventuring. . . .
Continued from Page 2

the variable stars carry capital letter names, a few stars are called by small letters and some objects even have Hershel's "H-numbers".

Last time, we forgot to mention that Shedat (α Cas.) means "the Sedar Tree", a name given to the constellation by Ulugh Beigh. Caph (β Cas.) "the camel's hump" or "the hand". Ruchbah (δ Cas.) means "the knee", situated in the left knee of Cassiopeia.

each candidate by Photo Branch in time to be published in the December 8 issue of the Astrogram. Tinkerbell's election will be held Monday, December 12.

Faced by an expected turnout of more than 1300 children for the rides, gifts, and refreshments, the Ames Entertainment Committee, eight strong is appealing for help in staffing the various booths and attractions.

No special qualifications are needed, and the AEC guarantees a rewarding experience to all those who help out. Listed below are the names of chairmen to contact:

ENGINE CONTRACTOR TO BE CHOSEN FOR PROJECT ROVER

NASA and the Atomic Energy Commission announced recently that a request for proposals will be sent to a number of manufacturers for research and development of a nuclear rocket engine. The nuclear rocket propulsion program (Project Rover) is a joint responsibility of the Atomic Energy Commission and NASA, and managed by the joint AEC-NASA Nuclear Propulsion Office, established on August 31,

Reception Desk, Irving Israel
Ext. 334
Publicity, Bob George, Ext.
224
Goody Shoppe, Dick Kurkowski, Ext. 247
Balloon Shoppe, Barbara
Citti, Ext. 235
Movies, Lighting, PA, Burt
Skow, Ext. 214

1960.

Project Rover's completed experiments to date include three nuclear reactors. The last experiment, KIWI-A-3, was successfully ground-tested by its designer, the Los Alamos Scientific Laboratory, at AEC's Nevada Test Site on October 19, 1960. This reactor used high pressure hydrogen gas for its "propellant."

The decision to select a contractor to provide engineering support and conduct research and development on the nuclear rocket engine cancels the NASA request of August 19, 1960, to qualified contractors for proposals on a 6-month preliminary design study.

The joint office made a careful evaluation of program requirements, which indicated that the interests of Project Rover could be served by an early selection of an industrial contractor.

Project Apollo.....
(Continued from Page 1)
search and development. Finally, as a fourth objective, a funding study is required so that the costs of the program can be assessed and reasonably allocated over the lifetime of the project.

The contracts are for \$250,000 each and will extend for a period of six months.

Cafeteria Menu

WEEK OF NOVEMBER 28

Mon. Italian Spaghetti, Meat Sauce, Salad or Vegetable, Ice Cream or Fruit.....90¢
Vegetable & Noodle Soup.....15¢

Tues. Old Fashion Beef Stew, Vegetables, Dumplings, Whipped Potatoes, Ice Cream or Pudding.....95¢
Cream of Mushroom Soup.....15¢

Wed. Corned Beef and Cabbage, Parsleyed Potatoes, Salad, Ice Cream or Pudding.....95¢
Split Pea Soup.....15¢

Thurs. Sirloin of Beef Roast, Potatoes, Vegetables, Ice Cream or Fruit.....95¢
Cream of Potato Soup.....15¢

Fri. Halibut Steak, Tartar Sauce, Potatoes, Vegetables, Ice Cream or Jello.....90¢
Clam Chowder.....15¢

WEEK OF DECEMBER 5

Mon. Beef Loaf, Creamed Peas, Potatoes, Vegetables or Salad, Ice Cream or Fruit.....90¢
Vegetable Soup.....15¢

Tues. Braised Sirloin Tips, Potatoes, Vegetables, Ice Cream or Pudding.....95¢
Butter Bean Soup.....15¢

Wed. Chuck Steak, Fried Onions, Potatoes, Salad or Vegetables, Ice Cream or Jello.....95¢
Split Pea Soup.....15¢

Thurs. Roast Leg of Pork, Dressing, Apple-sauce, Potatoes, Vegetables, Ice Cream or Pudding.....95¢
Tomato and Rice Soup.....15¢

Fri. Columbia River Salmon, Potatoes, Salad, Vegetables, Ice Cream or Jello.....90¢
Clam Chowder.....15¢

Complete Luncheon Includes
BREAD & BUTTER and TEA or COFFEE

WOMEN'S BASKETBALL LEAGUE PLANNED IN MOUNTAIN VIEW

Mountain View's Recreation Department is sponsoring a Women's Athletic Program for women 18 years of age and over. The featured activity of the program will be a basketball league which will start league play in January. Entry deadline for participation in the league is December 16; practice starts December 1 and league play begins January 12, 1961.

Anyone interested in playing in, managing or sponsoring a basketball team should contact Barbara Sampson, Women's Supervisor of Recreation, Mt. View Recreation Department, for further information. The number to call is YO 7-7211.

Joint IAS-ARS Meeting Announced

As a move toward reducing the number of National Meetings on the same or on related subjects, President of the Institute of the Aerospace Sciences, D. L. Putt (USAF Ret.) announced today that the Institute of the Aerospace Sciences had approved plans for a combined national technical meeting with the American Rocket Society to be held in Los Angeles in June, 1961.

After considering a number of plans for the conduct of such a meeting the IAS Council proposed that each Society conduct three days of technical sessions simultaneously, including two days of independent but coordinated programs and one day of joint programs. Members of both Societies would have reciprocal privileges with respect to all sessions during the meetings. There will be one dinner open to members of both groups.

The plan has been accepted in principal by both Societies and joint program planning is underway. The meetings are scheduled for June 13-16, at the Hotel Ambassador in Los Angeles.

"MESSIAH" TO BE PRESENTED IN SAN JOSE

Handel's "Messiah" will be given two presentations by The San Jose Municipal Chorus this year, Sunday, December 4th, at 3 o'clock, and Monday, December 5th, at 8:15 p.m. The turnaway audience of last year, numbering almost 1000 persons, suggested the double billing of the great oratorio this season. LeRoy V. Brant will conduct both performances.

Soloists will be Georgia Eldridge Prugh, soprano, of San Francisco; Margaret Burns Hawk, contralto, of San Francisco; Harold Oxsen, tenor, of Walnut Creek and Ellsworth Walston, bass, of Berkeley. Charles Duval of Los Gatos will be trumpeter.

The oratorio will be sung in the Scottish Rite auditorium, 3rd and St. James Sts., San Jose. Participants from Ames include Richard Pea of FIR Branch.

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Editor: B. P. Wilson
Reporters: NASA Employees.

Want Ads

Send your ads to the Astrogram through intra-Center mail. Ads cannot be accepted by telephone. Please include your home phone or address.

For Sale--Trailer hitch for '51 Mercury and overload springs both \$10. Call Bob Tibbets DRexel 9-1633.

Wanted--Riders, 8 - 4:30 shift. From East San Jose to Ames, via McKee Road and Bayshore. Call Esther Renshaw, ext. 393.

For Sale--35mm projector \$15. 20 watt amplifier \$10. 78 RPM turntable with pick up \$5. Call Reid-Selth. ANDrew 9-1477.

For Sale--Thor Ironer in A1 condition \$40. Call D. W. Brown WH 8-6378.

For Sale--10 cubic ft. GE refrigerator in good condition \$45. Call Brooks RE 9-3839 after 4:30 p.m.

For Sale--5-piece family room set - 2 arm chairs, 2 sofas, 1 corner stand. Cost \$180, 1 1/2 years old, like new. \$90. Call Brooks, RE 9-3839 after 4:30 p.m.

For Sale--Koyo 6-transistor portable radio, slightly used, with case and earphone. \$14. Call Carr Neel, DA 3-7026.

HANSEN REPORT APPEARS IN ARS JOURNAL

"Heat Diffusion in Gases, Including Effects of Chemical Reaction," an article by C. Fred Hansen, Chief of Physics Branch, appeared in the October issue of the ARS Journal. The article presents some solutions for the non-steady diffusion of heat through a semi-infinite gas having constant initial and boundary conditions, and a discussion of some relations between the heat flux potentials and heat transfer at the stagnation region of high speed vehicles.

SAFETY GLASSES FITTED, ADJUSTED IN SUPPLY

Ames now provides a fitting, adjusting and repair service for the safety glasses issued to employees. This service is limited to that normally rendered by a dispensing optician and does not include a prescription examination.

Providing of this service will mean that employees will no longer need to have fitting measurements made by a dispensing optician but will need only the doctor's prescription.

Arrangements for fitting, adjustment or repair service on safety glasses can be made by contacting Jack Bonnell in Supply. The service will be available one day per week. Special arrangements for emergency service will be made when warranted.

The Astrogram

AMES RESEARCH CENTER, MOFFETT FIELD, CALIFORNIA

VOLUME III

DECEMBER 8, 1960

NUMBER 4

Summary of First Quarter FY61 NASA Contracts Released

Contracts and research grants totaling more than \$133 million were awarded by NASA during the first quarter of fiscal year 1961. This figure represents the estimated total cost of contracts let during the three-month period. Among the research grants recently made by NASA are the following going to the University of California and Stanford University:

The University of California, \$32,515 for experimental research on the optical parameters of certain solids in the spectral region between 1500 and 200 angstroms; \$180,000 for research to determine how interplanetary environments affect biological processes and behavior; and \$195,000 to conduct studies of the reflection of spectra as a basis for studying extraterrestrial life involving both laboratory and high altitude studies.

Stanford University, \$95,000 for research on large deflection buckling of thin spherical shells under external pressures and of thin cylindrical shells under axial loads.

In addition, grants went to the High Altitude Observatory of Colorado (\$97,300) for research on new techniques of observation of solar phenomena, its interpretation and adaptation to observation from space vehicles; Harvard College (\$175,000) for research on multi-color photoelectric photometry of the Moon, Venus, Mars and other planets; and the Smithsonian Institution (\$2,400,000) for operation of optical satellite tracking programs.

Ames awarded contracts approximating \$2,275,000 in July, August and September. By far the largest single item was the award of \$1,223,000 to Carl N. Swenson Co. of San Jose for construction of the Data Reduction Center which

(Continued on Page 6)

Dr. Sharp Recent Ames Visitor



Dr. Edward R. Sharp, Director of Lewis Research Center, was a recent visitor to this Center. Accompanied by his wife, his son and daughter-in-law, Dr. Sharp arrived November 21 for a brief visit with Dr. DeFrance and other long-time friends here. The occasion may have marked his final official call here, for he has recently revealed plans to retire at the end of December. Grouped around the Dr. Ames scroll display in the lobby of the Administration building are Dr. DeFrance, Mr. and Mrs. Edward R. Sharp, Jr., Dr. and Mrs. Sharp and John F. Parsons.

NASA NEWS BRIEFS

Hyatt Appointment

Abraham Hyatt has been named Director of NASA's Office of Program Planning and Evaluation, NASA Administrator T. Keith Glennan announced recently. The appointment was effective December 1, 1960. Homer J. Stewart, whom he replaces, will return to his professorship at Cal Tech.

Mr. Hyatt has been with NASA since its organization in October 1958, and was serving as Deputy Director of Launch Vehicle Pro-

grams. Before joining NASA, Hyatt was Chief Scientist and Research and Analysis Officer of the Navy's Bureau of Aeronautics. In this capacity he was largely responsible for long-range planning of the Bureau of Aeronautics. Also while in the Navy, he played a part in preliminary design analysis which led to the Navy's Sky-streak and Skyrocket research airplanes and the Lark and Polaris missiles.

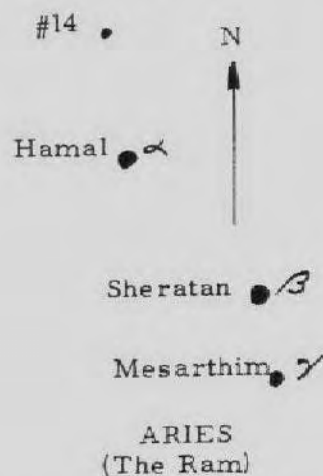
Hyatt was born in Ukraine, Russia, came to the United States as a small boy and became a naturalized citizen in 1927. He holds a Bachelor of Science de-

(Continued on Page 6)

Astroventuring...

★ with walt krumm

KNOW THE SKY



Aries is found about half way between the "Great Square of Pegasus" and the "Pleiades" group of Taurus. The constellation contains only three stars of any consequence with Hamal (α Arietis) the most conspicuous. (Remember we once asked, "How do you make a Ram of three stars?" Here is is!) Look almost overhead for these and they should be quite recognizable for there are few other stars in this area.

The Arabs knew Aries as "Al Hamal" the sheep and it has been called "The Prince of the Zodiac" or "Prince of the Celestial Signs."

So, the legend goes-----

Phrixus and Helle, the children of Athamas, King of Thessaly, were treated cruelly by their stepmother, so Mercury sent them a Ram with golden fleece upon which to escape. They mounted on the Ram's fleecy back and were carried through the air over land and sea but Helle fell off while crossing the strait dividing Europe and Asia. In memory of this sad event the strait was known as "Hellespont" or in today's nomenclature the "Dardanelles." Phrixus continued safely to Colchis and in gratitude for his deliverance, sacrificed the Ram and gave his golden fleece to Aetes, King of the country.

The golden fleece was hung in the sacred grove of Ares and guarded by a dragon that never slept. Later on the assembly of heroes, the Argonauts, organized to recover the golden fleece and succeeded in obtaining it. Jupiter placed the faithful Ram in the sky where it is now a link in the golden girdle of the zodiac encircling the sky.

Hamal is listed as the 48th

CHRISTMAS DECORATION SAFETY HINTS

Experience factors indicate that there will be many fires attributed to carelessness during the Christmas Holiday Season. To prevent your holiday season being marred by an unnecessary tragedy, exercise good judgment and caution in decorating your home or office for Christmas.

To help KEEP YOUR CHRISTMAS MERRY follow these rules for a FIRE SAFE CHRISTMAS:

- (1) Choose a small tree instead of a large one. A small tree can be just as pretty and it is less of a hazard.
- (2) Do not set up the tree until just a few days before Christmas. Keep the tree outdoors until ready to install it.
- (3) Set up the tree in the coolest part of the house away from radiators, heaters or fireplaces. Stand it in water, which retards the drying out process.
- (4) Do not use cotton or paper for decorating the tree unless the decorations are flameproof.
- (5) Do not place electric trains around the tree.
- (6) Never use candles. Use electric lighting sets only. Inspect every socket and wire to make sure the set is in good condition. Discard sets with frayed wiring. When buying new sets, look for the Underwriters' Laboratories, Inc. label or marker.
- (7) Use flameproof or fireproof decorations of glass or metal to decorate your tree.
- (8) Remove gift wrappings promptly after gifts have been opened.
- (9) Provide a switch some distance from the tree for turning tree lights off and on.
- (10) Do not leave lights burning when no one is in the house. From time to time, inspect the tree and see whether any of the needles near the lights have started to turn brown; if so, change the position of the lights.
- (11) When needles start falling, take the tree down and discard it outdoors.

brightest star in the catalog of the "50 brightest stars" and is given a magnitude of exactly 2 (2.00).

γ is a nice blue and white double of 45 seconds separation with magnitudes of 5 and 8.

#14 is a field glass triple but you will really have to look for one component, 5-9-7 magnitudes of 93 and 106 seconds separation. Look especially at the 7th magni-

Ames Airings

.....by
Sharon Scharmen

New owner of white leather snow boots is RONNI MC COY (Sec.) who expected to meet a snowstorm on her trip to Salt Lake City, Utah. Ronni visited her girl friend and former employee of Ames, Stormy Morgan O'Brien, who is now residing there since her recent marriage. She spent the week of Thanksgiving there, returning home November 27. While in Salt Lake City, she had an opportunity to visit the lovely Mormon Temple grounds. You are probably wondering whether Ronni met up with a snowstorm on this trip. Well---no, but she sure has a nice pair of snow boots now.....Back from a two-weeks flying tour of the Hawaiian Islands is JOHN GERDTS (Mach.) and his wife. They visited relatives on Hawaii, then flew to Oahu and Kauai, and enjoyed the beautiful beaches at Waikiki and Kaneohe. John says he hardly recognized his old "stomping grounds", which he hadn't seen since 1944.....Walking the floor these late nights are new parents JUDITH HOLLENBECK (formerly of Fluid Mech.) with her new baby boy, James Gregory, born November 20 and weighing 7 lbs, 1 ounce; REED MARCHANT (FIR) with his new baby girl, Julie Ann, born November 19 and weighing 9 lbs, 3 ounces; and GENE LYMAN (8- by 7-) with his baby boy, Timothy, born November 26, and weighing in at 7 lbs, 9 ounces.....MARGARET PAULEK (Pers.) spent Thanksgiving weekend in Los Angeles visiting a couple of her cousins. One of the things they did was to visit a movie set in the Santa Rosa Valley where several western films are made. Margaret says she had a real "neat" weekend all in all.....DOROTHY ARMSTRONG (Fiscal) and Ivan Curran exchanged vows in the United Presbyterian Church of West Valley, Cupertino on November 19, 1960.....BYRON NELSON (Mach.) and his wife, Barbara (former employee of Fiscal), are planning a 5-week tour of interior Mexico. Mrs. Schlagel, Barbara's mother, will accompany them, painting scenic views she encounters along the way. We wish Byron and Barbara a happy and leisurely tour.

tude star for they are listed as white, blue and lilac. Ever hear of a lilac colored star?-----

Presenting . . . Tinkerbelle Candidates, 1960!

LIZ
BARKERBETTY
BRADYJUDY
CROWNOVERALICE
HAMILTONCAROLYN
EMORYDIANN
DIEGELMANLYN
DAVIDSENCAROL
PETTITTBEVERLY
JAQUES

One of these candidates will be elected Tinkerbelle, 1960 by a popular vote to be held Monday, December 12. The winner will assist Santa at the Ames Children's Christmas Party Saturday, December 17, by welcoming the young visitors and distributing candy among the more than 1300 children expected to turn out for the rides, games, food and exhibits.

Voting will be accomplished by clipping out the ballot found on this page, marking an X in the square by the name of your choice, and sending it by intra-center mail to SANTA, Ames. Votes received later than Monday will not be counted.

Features of the day will include a talk with Santa, a closeup view of a real helicopter, prizes,

(Continued on Page 4)

TINKERBELL CONTEST BALLOT

- | | |
|---|--|
| <input type="checkbox"/> LIZ BARKER | <input type="checkbox"/> CAROLYN EMORY |
| <input type="checkbox"/> BETTY BRADY | <input type="checkbox"/> DIANN DIEGELMAN |
| <input type="checkbox"/> JUDY CROWNOVER | <input type="checkbox"/> LYN DAVIDSEN |
| <input type="checkbox"/> ALICE HAMILTON | <input type="checkbox"/> CAROL PETTITT |
| <input type="checkbox"/> BEVERLY JAQUES | |

1. Clip out this ballot
2. Mark X in appropriate square
3. Mail by intra-center mail to SANTA, Ames
4. Deadline for mailing is noon, December 12.

TINKERBELL . . . (Continued from Page 3)

a multitude of refreshments and a dance review by a group of young students from Fredrick and Asella Studios in Santa Clara. Among the numbers to be presented at 11 a.m. and 2 p.m. will be Rose Carbone and Steve Johnson performing modern jazz steps, Pamela Hicks and John Laine leading a group of ballroom dancers and Jill Christianson, Debra Alexander and Cathy Haro presenting a tap dance routine.

Santa advises parents to allow the children to pick out their own gifts--much time will be saved for everyone. According to the Ames Entertainment Committee, the response to the "help wanted" plea in the last issue was gratifying, but a few more balloon blowers and receptionists are needed. Call Hy Zimmer, ext. 258.

"Smoking Saddles" to Premier at Ames Christmas Party



A Western to end all Westerns has been produced in the rugged hill country behind Milpitas by certain members of the Photo and Illustration staffs. These individuals, who needed only one day of shooting on location to capture the message contained in "Smoking Saddles", wrote, directed, acted, filmed and produced this epic on their own free time.

Set in the year 1866, the unique plot comments on land, cattle, gold, good and evil simultaneously. A throwback to the silent movie era, the "flicker" has even been retained. Stationary camera, lighting problems, camera motion--it's all there in "Smoking Saddles", and you can see it December 17 at your Ames Christmas Party.

Director First Subscriber to Children's Christmas Party



Dr. Smith J. DeFrance, Ames Director, was the first subscriber to this year's Ames Children's Christmas Party. Victoria Malatesta, Administrative Services subscription representative, received his contribution.

TO ALL AMES EMPLOYEES:

The Annual Christmas Party for children is one of the oldest and finest traditions of the Ames Research Center. Each December, our energetic Entertainment Committee, backed by the unstinting support of all of us at Ames, has staged an outstanding event for the children of our staff. On that day we appropriately lay aside the concerns of a busy year and join in an atmosphere of holiday fun for a day devoted to the younger generation. I sincerely invite all of you to join with me in giving our best to support 1960 Christmas Party for Children.

Smith J. DeFrance
Director



Cafeteria Menu

WEEK OF DECEMBER 12

<u>Mon.</u>	Meat Loaf and Macaroni and Cheese Au Gratin, Stewed Tomatoes or Peas, Ice Cream or Pudding.....	90¢
	Vegetable Soup.....	15¢
<u>Tues.</u>	Large Pork Chop, Hawaiian Mashed Potatoes, String Beans, Ice Cream or Jello....	90¢
	Cream of Mushroom Soup.....	15¢
<u>Wed.</u>	Pot Roast of Beef, Mashed Potatoes, Assorted Vegetables, Ice Cream or Pudding.....	95¢
	Potato Soup.....	15¢
<u>Thurs.</u>	Ground Chuck Steak, Fried Onions, Oven Brown Potatoes, Vegetable, Ice Cream or Fruit.....	90¢
	Navy Bean Soup.....	15¢
<u>Fri.</u>	Grilled Halibut Steak, Tartar Sauce, Scalloped Potatoes, Vegetable, Ice Cream or Jello.....	90¢
	Clam Chowder.....	15¢
	SPECIAL --- Meat Entree	

WEEK OF DECEMBER 19

<u>Mon.</u>	Beef Stew and Fresh Vegetables, Mashed Potatoes, Green Salad with Sour Cream Dressing, Ice Cream or Pudding.....	95¢
	Cream of Onion Soup.....	15¢
<u>Tues.</u>	Chuck Steak and Onions, Mashed Potatoes, Vegetable, Cottage Cheese and Fruit Salad, Ice Cream or Fruit.....	90¢
	Potato Soup Ala Jackson.....	15¢
<u>Wed.</u>	Roast Beef and Buttered Noodles, Vegetable, Ice Cream or Jello.....	95¢
	Vegetable Soup.....	15¢
<u>Thurs.</u>	Baked Ham and Yams, Green Salad, Vegetable, Ice Cream or Fruit.....	95¢
	Split Pea Soup.....	15¢
<u>Fri.</u>	Fillet of Sole, Tartar Sauce, French Fried Potatoes, Vegetable or Cole Slaw, Ice Cream or Pudding.....	90¢
	Clam Chowder.....	15¢
	SPECIAL --- Meat Entree	

Complete Luncheon Includes
BREAD & BUTTER and TEA or COFFEE

Ames Closeup



DEAN R. CHAPMAN

In April, 1959, Dean Chapman of Ames was among eleven Federal career employees who received the Rockefeller Public Service Award for outstanding public service. The award, designed to give special recognition for achievement to civilians in the executive branch of the Federal Government, was in the form of financial aid and sufficient to enable each recipient to spend an academic year at an institution of higher learning of his choice. The employees were urged to pursue a program which broadened their professional careers rather than one tending to further intensify their specialties.

By September, Chapman and his family were on their way to England, where he had arranged to spend his time attending radio-astronomy seminars at the University of Manchester and learning the intricacies of the University-operated radio telescope at nearby Jodrell Bank.

World's largest radio telescope, the Jodrell Bank facility is the only known instrument capable of tracking the deep-space probes now being conducted by the United States and Russia. The 250-foot diameter parabolic reflector will remain the world's most sensitive antenna until completion of a 600-foot reflector scheduled for construction in the U. S. in the near future. The facility is located about twenty miles from the University, in the gently rolling hills of north-central England. "It's quite a sight," says Chapman, "Picture a typical English countryside of open fields and hedgerows. As a visitor approaches the facility, he becomes increasingly aware of a huge bowl elevated on a skeletal framework, completely foreign

to the centuries-old landscape and completely dominating it."

The story behind the facility is largely the story of Manchester University's Professor A. C. B. Lovell and his struggle to convince the English government to build such a telescope. In the pre-Sputnik days, space vehicles and interplanetary travel seemed many years from reality. No action had been initiated toward utilizing the discovery of an American engineer in the early 1930's that the heavens somehow emit radio-frequency signals. Professor Lovell fortunately succeeded in his task and construction began in October, 1952. The telescope was completed just two months before Russia's world-awakening Sputnik I launching in October, 1957.

Now the facility is utilized by all countries engaged in space research including Russia. Since the telescope receives radio waves, it can be used all day as well as night, and is believed to penetrate outer space farther than conventional instruments, which must rely on the target star's luminosity.

Chapman attended classes at the University, discussed with other scientists the work carried out at Jodrell Bank, studied the information obtained from the telescope and by June of this year had learned to read technical Russian reports passably well. In commenting on his struggle to master the written reports, Chapman said, "It took me nine months to read Russian as well as I was able to read German after only eleven weeks of study."

During the course of his studies he became involved in research having to do with the origin of "tektites", button-shaped droplets of high quality glass that have been regarded as charms by their discoverers throughout the ages. Usually of a dark brown color, these mysterious objects have been found on all the major continents. Scientists estimate the latest tektite shower occurred on Earth about 600,000 years ago. Extinct volcanoes, earth lightning, lost planets, and unknown prehistoric races remarkably advanced in glass technology -- as well as the Sun, Moon and stars -- all have been viewed by scientists as possible origins for tektites.

Chapman spent the balance of this summer and early fall "chasing tektites", or visiting collections of the aerodynamically shaped objects. These travels

led the Chapman family as far south as Egypt and as far north as Norway.

As an aerodynamicist, Chapman recognized an irrefutable resemblance between certain concentric waves displayed on Australian tektites and the characteristics exhibited by molten glass models in wind tunnel tests. His calculations determined the approximate speed and angle of entry into the Earth's atmosphere of such droplets, and have been published in the October 29 issue of NATURE, a scientific journal of world-wide circulation. They show that the Moon is the most likely source. "I expect to get letters both for and against my conclusions", Dean said. "But if they did come from the Moon, here are examples of extraterrestrial material that have been dropped in our laps. Instead of waiting until we can bring back samples from a lunar mission, we can learn a lot right now about the composition of the Moon's surface."

Chapman, who works in the Fluid Mechanics Branch at Ames, was born in Fort Sumner, New Mexico, and received his B. S., M. S. and PhD degrees from California Institute of Technology. He has been employed at Ames since 1944. He and Marguerite, his wife, and their children, Anita, 13, and Donald (Casey), 9, make their home in Palo Alto.

Eggers Elected ARS Fellow

Dr. Alfred J. Eggers, Jr., Vehicle Environment Division Chief, was recently notified of his election as a Fellow member of the American Rocket Society. The honor was accorded him in recognition of his outstanding contribution to the rocket and astronautics field.

Fellow members were introduced at the ARS fifteenth annual Honors Night Dinner in Washington, D. C., December 7, 1960.

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Editor: B. P. Wilson

Reporters: NASA Employees

SUMMARY. . .
(Continued from Page 1)

is now well under way.

Contracts for a hydraulic press brake (\$34,398), recording system to plot output from the 704 computer (\$55,000), a shock tube system (\$30,143), electron microscope (\$29,840) and electron paramagnetic resonance spectrometer (\$30,425) were also awarded.

Among Goddard Space Flight Center's awards were \$8,233,425 for the SNAP-8 nuclear power conversion system and \$947,908 for infra-red radiation experiment integration and modifications to ground stations and pre/post launch support for the Tiro II meteorological satellite.

Langley Research Center's contracts included \$700,000 for design, development, assembly and checkout for launching five Scout vehicles and \$482,000 for an analog computing system for Goddard Space Science Laboratory.

Lewis Research Center's contracts included \$76,727 for design, development, testing and delivery of four recovery systems, three cameras and one environmental test unit for Aerobee sounding rocket zero gravity tests conducted at Wallops Island, Virginia.

Topping all NASA projects in cost was Marshall Space Flight Center's \$44,700,000 award to North American Aviation, Inc. for development of a 200,000 pound thrust liquid hydrogen-fueled engine for upper stages of advance configurations of Saturn.

Flight Research Center awarded a \$497,988 contract for a radar display and computing equipment system for acquiring and converting data from radar stations along the X-15 flight path.

NEWS BRIEFS . . .

(Continued from Page 1)

gree in Aeronautical Engineering from Georgia Institute of Technology and served in the Marine Corps during World War II.

NASA Opens PMR Office

The NASA is establishing a test support office at the Pacific Missile Range, Point Mugu, California. The new office is a part of the Launch Operations Directorate, George C. Marshall Space Flight Center, Huntsville, Alabama. The office will be the central NASA activity at the Pacific Missile Range. Among space vehicles presently scheduled to be launched from PMR are the Scout and Thor Agena B.

BASKETBALL

The insistent protest of sore and stiff muscles is being felt among the forty or more Ames athletes who recently ushered in another season of spirited combat on the courts at Mountain View High School Gym. Words like foul line, hook shot, dribbling and lay-up are beginning to replace terms such as first down, red dog and fumble, while weekend TV widows prepare to become Tuesday night cheering sections and medical corpsmen.

Four Ames teams will compete in the 10-weeks long race for first place and a possible trophy. VED, Shops, Heat Transfer, Unitary and Mechanical Engineering are providing the bulk of manpower this year. Each team plays one game each Tuesday night, and two games are held so that all players can participate.

League officials are Dick Petersen (3.5-Foot) and Harry DeVoto (Illus). The league will continue until early March.

GOLF

Ames Golf Club's coveted Vardon Trophy recently was presented to Jim Nelan (Mod. Constr.) for coming up with low net score for the season. The six lowest scores out of the nine tournaments played were used to determine the winner. The original Vardon trophy, named after an early English golf professional whose club grip is now in popular use, is presented internationally to the professional golfer who has low gross for the year. Nelan also won the Director's Cup for low net score in the Ames Golf Club's Championship Tournament held in September.

PROJECT ECHO, MERCURY FILMS AVAILABLE

A copy of the film "Project Echo" has been received in the Ames Library and is available for public showings. The film is a documentary history of the 10-story high passive communications satellite which was launched this fall. Time for a complete running of the color film is 28 minutes.

"Project Mercury Report #2," a 30-minute sound and color film is also available for public showing.

Persons interested in showing either film should call the Library, ext. 262.

Want Ads

Send your ads to the Astrogram through intra-Center mail. Ads cannot be accepted by telephone. Please include your home phone or address.

For Sale--Delta jig saw, 24". Variable speed drive, \$65. Call Britton, AX 2-1914.

For Sale or Rent--3 bedroom house, fenced back yard, walking distance of Moffett Field, \$13,900. GI resale. Rent \$115 per month. Call Frieda Sellers, YO 7-7665.

Wanted--Ride, 8:00 to 4:30 shift. From Mt. View to Ames, via Walker Drive and Castro. Call Nancy Wright, ext. 216.

For Sale--In smog free Sonoma County - 3 to 6 acres on main county road bordering on live creek. Call A. F. Cracolice, ES 7-7566.

For Sale--Westmore, 3 bedroom, 2 bath home, by owner. Large fenced lot; Mary-El - El Camino vicinity; 4 1/2% GI loan; \$18,500. 864 Mango Street, Sunnyvale, RE 9-5806.

Borrowed and not returned--One helium regulator I.D.E. 946. Please call J. Coyle, YO 7-8809.

For Rent--3 bedroom house in San Jose on Chestnut near Route 17 Freeway - \$90 per month. Contact D. Frolich, ES 7-6074.

For Sale--Furniture in good condition. 2 blond step-end tables; 1 blond corner table; 1 brocade lounge chair. Total price \$35. Call J. Pope, DR 9-4051.

For Sale--A limited supply of NASA emblem ash trays are available in the cafeteria @ 75¢ each.

ECHO I STAMPS TO BE ISSUED

Postmaster General Arthur E. Summerfield recently announced plans to issue a 4-cent stamp on December 15, 1960, at Washington, D. C., commemorating Echo I -- the world's first passive communications satellite -- placed in orbit around the earth by the NASA on August 12, 1960.

Collectors desiring first day cancellations of the 4-cent Echo I stamp may send addressed envelopes, together with remittance to cover the cost of the stamps to be affixed, to the Postmaster, Washington 13, D. C. Each envelope must be marked, in pencil, in the upper right corner, indicating the number of stamps to be affixed.

An enclosure of medium weight should be placed in each envelope and the flap either turned in or sealed. The outside envelope to the postmaster should be clearly marked "First day covers 4-cent Echo I." Collectors are cautioned to send these covers separately. Any orders containing requests for other issues will be returned unserved by the postmaster. Collectors are also cautioned that orders must not include requests for uncanceled stamps.

Volume III

December 22, 1960

No. 5

AMES RESEARCH CENTER

Astrogram

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION



1961 Guggenheim Fellowships Announced

The Daniel and Florence Guggenheim Foundation has announced that 1961 Graduate Fellowships up to \$2,000 each plus tuition are now being offered to outstanding candidates holding bachelor's degrees in aerodynamics, fluid mechanics, physics, physical chemistry, applied physics, applied mathematics, engineering sciences and aeronautical, mechanical, chemical or civil engineering for study in propulsion, astronautics and flight structures.

Candidates must have scientific or engineering degrees, and special interest in rockets, missiles, flight structures or astronautics.

The Jet Propulsion Fellowships are for study at the Guggenheim Jet Propulsion Centers at Princeton University and California Institute of Technology; the Flight Structures Fellowships are for study at the Guggenheim Institute of Flight Structures at Columbia University.

Up to six Fellowships are granted annually at each institution, a total of 12 to 18. Each grant provides for tuition and a stipend which ranges from \$1,500 to \$2,000, depending on the stage of advancement of the Fellow.

Applications must be received by March 1, 1961. A limited number of applications and descriptive brochures are available in Personnel. Contact John Leveen, Training Officer, ext. 412.

FEDERAL GOVERNMENT RECRUITERS' INSTITUTE HELD RECENTLY

A Federal Government Recruiters' Training Institute was held at Del Monte Lodge, Monterey, December 12-13.

Participants in the two-day conference included Government agency recruiters and personnel officers and placement officials from colleges and universities in the Region. Vincent A. Pettine, Assistant Personnel Officer, and William C. Davy, a member of the research staff of the Supersonic Free Flight Wind Tunnel Branch represented Ames at the meet.

Recognizing the urgent need in Government for high quality scientific, technical and administrative personnel, the U.S. Civil Service Regional Office, working through a steering committee of eleven Federal Government and college representatives, arranged a comprehensive conference program designed to explore ways of improving Government recruiting and create better understanding of crucial needs and problems.

Included on the conference agenda were panel discussions with at least two Federal recruiting directors and college placement officials serving as panel members in each instance, work-shop studies of specific recruitment problems and the showing of films dealing with the fundamentals of recruiting and manpower needs during the 1960-1970 decade.

Bloodmobile Visit Scheduled Here

The Santa Clara Valley Bloodmobile will visit Ames Wednesday, January 11 from 9:00 a.m. until noon.

All Ames employees who wish to donate blood may sign up on the sheet provided for that purpose in each branch office or call Thelma Harriman, ext. 411 for an appointment time. As before, members of an employee's family may donate Wednesday, also.

Blood on deposit at the Blood Center is available to all Ames Personnel and their immediate families.

JONES, FOSTER SPEAK AT ISA MEETING

Robert T. Jones of Theoretical Branch and John V. Foster, Assistant Chief, Vehicle Instrumentation Research Branch were guest speakers at the monthly meeting of the Santa Clara Valley Chapter, Instrument Society of America December 5, 1960. The dinner meeting was held at Rudolfo's Restaurant in Palo Alto, and attended by more than 45 members and guests.

Robert Jones gave a "black-board talk" and demonstration of modern telescope designs, utilizing the Schmidt and Maksutov type telescopes developed by his Vega Instrument Company of Palo Alto.

John Foster, utilizing color slides, discussed the Orbiting Astronomical Observatory project. Included in his topics were the astronomical reasons for the satellite, the proposed experiments and a general description of the satellite.

Carr B. Neel, Jr., of Heat Transfer is a member of the ISA Program Committee.



Ames Cafeteria Menu

WEEK OF DECEMBER 26

Mon. HOLIDAY

Tues. Beef Short Ribs, Herzeradish, Mashed Potatoes, Vegetable, Ice Cream or Jello... 95¢
Tomato Macaroni Soup..... 15¢

Wed. Chicken Ravioli, Meat Sauce, Tossed Salad or Vegetables, Ice Cream or Pudding. 90¢
Split Pea Soup..... 15¢

Thurs. Chicken Fried Steak, Pan Gravy, Whipped Potatoes, Vegetable, Ice Cream or Fruit..... 95¢
Cream of Mushroom Soup..... 15¢

Fri. French Fried Scallops, Sauce, French Fries, Cole Slaw or Vegetable, Ice Cream or Jello..... 90¢
Corn Chowder..... 15¢

WEEK OF JANUARY 2

Mon. HOLIDAY

Tues. Italian Spaghetti and Meat Sauce, Salad or Vegetable, Ice Cream or Pudding..... 90¢
Soup..... 15¢

Wed. Ground Chuck Steak, Fried Onions, Salad or Vegetable, Ice Cream or Fruit..... 95¢
Split Pea Soup..... 15¢

Thurs. Top Sirloin Steak, French Fries, Vegetable, Ice Cream or Pudding..... \$1.35
Vegetable Soup..... 15¢

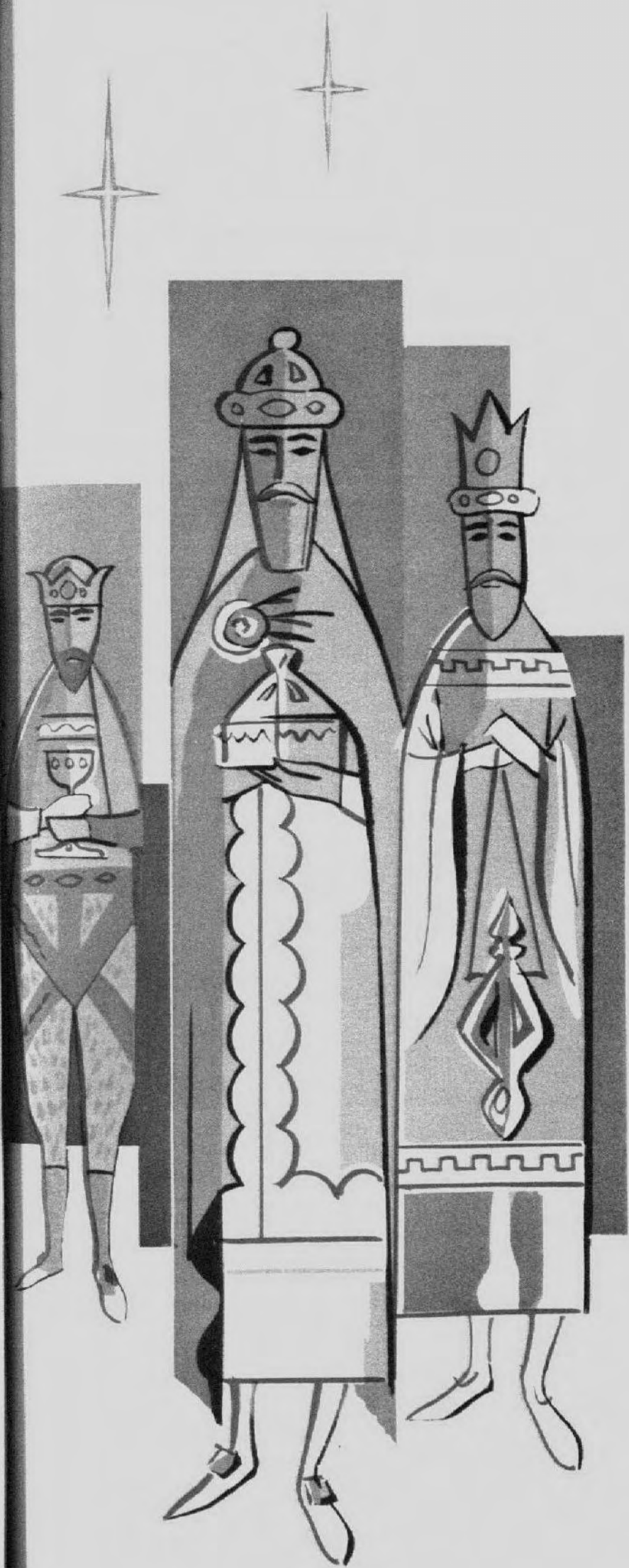
Fri. French Fried Prawns, Sauce, French Fries and Vegetable, Ice Cream or Jello... 90¢
Clam Chowder..... 15¢

Complete Luncheon Includes
BREAD & BUTTER and TEA or COFFEE

CREDIT UNION LOANS

The Moffett Field Employees Credit Union can grant loans for the purchase of new and used cars, furniture, medical and personal expenses and consolidation of loans at the low rate of \$6.50 per year per \$100.

See A. Bondi, Treasurer, Manager at the Credit Union Office.



May warmth and
good cheer be with
each of you during the
Christmas Season and may
1961 bring to each of you
and your families happiness,
health and the many blessings
we enjoy as free Americans.
To every member of the
Ames Research Center staff
I extend sincere best wishes
for a very Merry Christmas
and a Happy New Year.

Smith J. DeFrance

Smith J. DeFrance,
Director

Many Young Visitors Attend Ames Christmas Party



MISS TINKER-BELL, 1960 (Carolyn Emory of Personnel), receives a cup from Santa Claus commemorating her selection for the annual role at the Ames Christmas Party held last Saturday, December 17.

SANTA AND TINKER hand out candy to kiddies attending the Christmas party. Over 1300 children turned out for the party this year accompanied by over 600 adults. One of the outstanding features of the show was the "Smoking Saddles" movie written, directed, enacted and filmed by Ames employees.



Photos at right and below by Burt Skow and Dick Kurkowski.



AMID A SEA OF BALLOONS and happy youngsters, students from the Frederick and Asella Studios in Santa Clara presented a dance review. Members of the Ames Entertainment Committee were enthusiastic over the response to the many presentations at this year's Christmas Party.

The ASTROGRAM, an official publication of the Ames Research Center, NASA, Moffett Field, Calif., is published bi-weekly in the interest of Ames employees. Send contributions to The ASTROGRAM -- phone 385. Deadline: Thursday between publication dates.
Editor: B. P. Wilson
Reporters: NASA Employees.

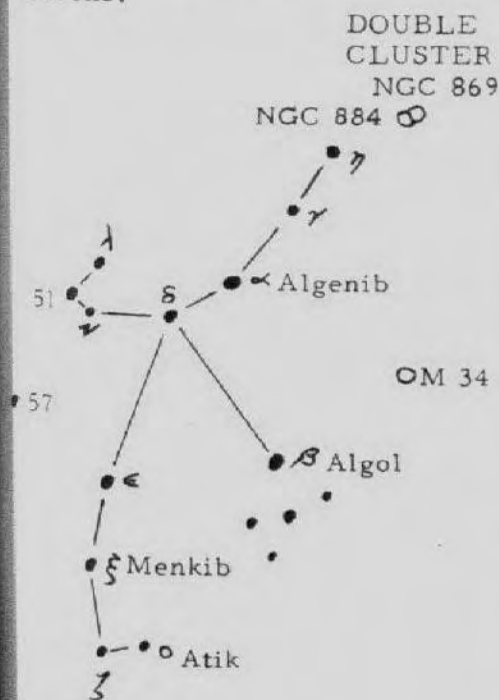
Astroventuring... ★ with walt krumm

KNOW THE SKY

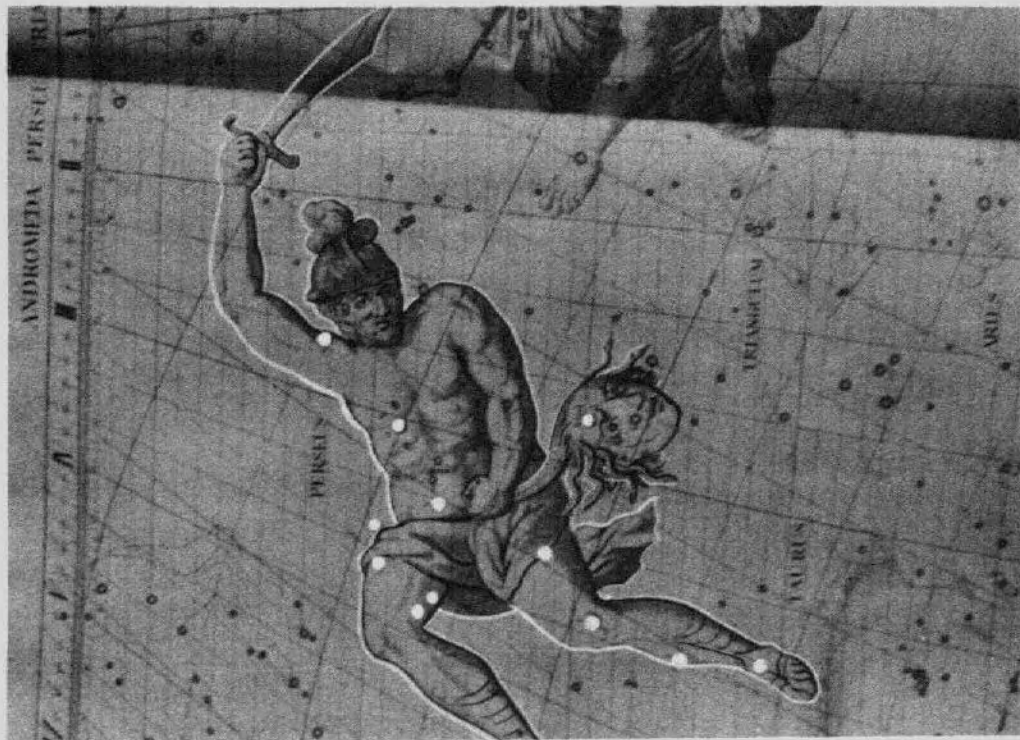
PERSEUS (the Champion)

Perseus lies below (south) of Cassiopeia and is recognized by a curved line of stars from below ϵ Cas. and running a little to the southeast. Algol (β Per.) is easily found for it forms the right angle of a triangle with Algenib (α Per.) and Almack (γ And.)

Perseus was the son of Jupiter and Danae. See picture (right), from Flamsteed's Atlas of 1729. (This pictures the mythological Perseus as he was seen in the mind's eye of the artist.) His cruel grandfather, Acrisius, placed the infant Perseus and his mother in a chest and cast them into the sea. They were rescued by fishermen and carried to Polydectes, King of Seriphus who adopted Perseus. To show his gratitude to the King, Perseus set off to obtain the head of Medusa (the gal with snakes for hair --see the picture). To enable Perseus to conquer Medusa, for she turned to stone every one that gazed upon her, the gods fitted Perseus with a helmet that made him invisible, a shield that shone like a mirror, and winged sandals. Perseus thus equipped sought out Medusa, cut off her head with one powerful blow and returned with it to Polydectes. For this deed, Perseus was made immortal and given a place in the heavens.



PERSEUS (The Champion)



Observe

Look again at the double-cluster above η Per.

Observe the field around α Per., Algenib, with field glasses.

Star 57 Per. may be separated with field glasses. 5 and 6 magnitude at 114" separation.

Observe Algol, the famous eclipsing double where the pri-

mary star, Algol, is eclipsed by a dark companion every 68 hours 49 minutes. If Algol is less bright than star 25 Per. or nearly equal, you are witnessing an eclipse. To find the times for these phenomena one must consult the variable star tables. But try it anyway.

M34 is an open or galactic cluster, about halfway from Algol to γ Andromeda, to look for.

Personnel-ly Speaking

HOW THE ACCIDENT PROCEDURE OPERATES

Most employees are now aware of the correct procedure to use for calling an ambulance to the scene of an accident on the Ames side, but during the stress of emergency some still dial 0 to reach the Ames switchboard operator. This former procedure has been replaced by a new, quicker method that bypasses the Ames board and connects the caller directly to the Navy Dispensary.

When an emergency occurs and an ambulance is needed, dial 400 immediately. This is the Dispensary. Briefly describe the situation and emphasize the location of the victim by building designation as shown on your telephone dial. An ambulance will be dispatched immediately. Be sure an adequate number of personnel are assigned as signalmen to aid the driver in quickly locating the victim.

Other related events are set in motion by dialing 400. A warning bell sounds in the Administration Building, alerting members of the Administrative and Personnel staffs. After listening in on the emergency call over a special telephone on her desk connected directly to the Dispensary, the receptionist directs certain individuals to meet the ambulance with a staff car and lead it to the scene. A member of the Personnel staff then accompanies the victim to the Dispensary and acts in behalf of Ames to insure prompt treatment and provide such information and services that will most benefit the case. If the Navy physician advises immediate treatment at the Palo Alto Hospital, the representative remains with the patient until he is admitted there and supplies information at the receiving desk.

Any divergence from the new procedure, such as calling the Ames operator, can result only in losing time and defeating the purpose of the direct line. For your own protection, be sure you and your fellow workers understand and follow the above procedure. It is the quickest way to get professional medical attention to an accident victim.

Ames Airings

.....by
Sharon Scharmen

Some news notes from the Structural Dynamics Branch---- CHARLES COE, wife Shirley, and family left by plane for New Orleans on December 17 for the Christmas holidays; BOB GEORGE is planning a holiday trip to Denver, Colorado over the Christmas week; ART KASKEY was married to Marjorie Spence on December 9 at the St. Francis Episcopal Church of San Jose.....

Among the new PABLUM PUSHERS: JEANETTE MC GEE (formerly of Ad. Serv.) became the proud mother of a 7 lb baby boy, Dennis, born on Thanksgiving Day. Scott Rikio was born to NOBUO NAKAMATSU (HBR) and his wife, November, 26, weighing 6 lbs, 9 oz. Lorraine Marie was born to the household of WILLIAM C. A. CARLSON (Elec) on November 29 --she weighed in at 6 lbs, 4 oz. Having her 2 a.m. feeding these days is Deborah Lynn Smith, born December 7 to KENNETH SMITH (Mach) and his wife--mother and daughter are doing fine, but "Daddy" is showing signs of loss of sleep. At 8:01 a.m., December 11, Brook Channing Wilson pre-

sented himself to the staff of the Palo Alto Hospital and the world. This "handsome" specimen of babyhood (quoting his father) weighed in at a healthy 6 lbs, 13 oz, and is a strapping 19 inches long. Oh yes, the proud father is BRAD WILSON, Editor of the Astrogram.....The library staff surprised former employee BARBARA MARTINEZ with a baby stroller December 14 for her coming event. They will also honor her at a baby shower on January 7, 1961, which will be held at Jeanette McGee's home..... About two months ago a dream came true for KATHLEEN THURMAN (Proc. & Supply) and her family. They were able to purchase a 25-foot cabin cruiser. The vessel is named "Third Stage" and is berthed at Bethel Island. They have taken several fishing trips along the Delta Region and are thoroughly enjoying their new luxury..... Shooting like a pro at Spring Valley in the Director's Club Tournament, FEO CORSINI (Mach) took low gross honors (212), low net runner-up (200) and best round trophy with a 69..... DON HUMPAL (Proc. & Supply) exchanged vows with Sarah Cousins on December 6 in Reno, Nevada..... We want to wish every one of you a HAPPY HOLIDAY SEASON and may the true spirit of Christmas abide in your home.

The following message, recently received by Dr. DeFrance, is a reaffirmation of the spirit of equality of opportunity in Federal service. It was signed by Dr. T. Keith Glennan, NASA Administrator.

On January 18, 1955, the President issued Executive Order No. 10590. This Order states that in all personnel actions in the Executive Branch of the Government there shall be no discrimination because of race, color, religion, or national origin. The Order instructs everyone in the Executive Branch who is responsible for personnel actions that merit and fitness alone shall be the basis for all decisions, whether in the selection, promotion, demotion, separation, transfer, or discipline of employees.

The policy is firm and clear on this matter of equality of opportunity in the personnel matters of the administrative branch of the Federal Government. It looks toward an administrative operation in which fairness and justice will be the keynote of all personnel operations, and in which every citizen, whether he be an applicant for employment or an experienced career employee, will know that he will be judged without regard to his race, creed, or religion.

Recently, in reviewing our program in NASA, it was my opinion that we are doing a good job in moving along toward this goal. The ultimate success in realizing it, however, will depend in the last analysis upon the willingness of all concerned with administrative operations to make equality of opportunity a fundamental part of your day-to-day outlook toward your job. Such an attitude does justice to the spirit of the Executive Order and to the finest American traditions, as well as paying dividends in effective management.

Let us continue to do our best.

Library Releases List of Available Films

The following films are now available for public showing and may be obtained by contacting the Library, ext. 262:

COLOR

- Ames Laboratory in Action (29 min)
- NACA Research (20 min)
- High Speed Flight Research (19 min)
- Research for Tomorrow's Aircraft (19 min)
- Success Story (TV Program, 30 min)
- Beating the Heat (22 min)
- High Temperature Materials (24 min)
- Earth Satellites (14 min)
- Time and Space (27 min)
- Chemistry of Meteor Vaporization (25 min)
- U. S. Space Exploration, 1958 (19 min)
- Project Mercury Congressional Report (33 min)
- Tiros Weather Satellite (15 min)
- Rescue Breathing (22 min)
- X-15 Documentary (27 min)
- Project Echo (28 min)
- Project Mercury Report #2 (30 min)

BLACK AND WHITE

- Performance of Long Range Hypervelocity Vehicles (30 min)
- Aerodynamic Heating and Deceleration During Re-entry into Planetary Atmospheres (27 min)
- Celestial Mechanics-Lunar Probe (12 min)
- NASA Roundtable--Scientists Discuss the Moon (19 min)
- The Next 100 Years (27 min)

Want Ads

Send your ads to the Astrogram through intra-Center mail. Ads cannot be accepted by telephone. Please include your home phone or address.

For Sale--1956 Lincoln Premier - two door hardtop. All power, immaculate condition, 40,000 miles. Light green and ivory, leather interior to match. Sell or trade equity. Call RE 9-5806.

For Sale--Buick, 1947 4-door Super. Standard transmission, R & H, only 75,000 actual miles. First \$100 takes. Call D. Schilling ES 7-4792.

For Sale--2 four-piece place settings of Royal Danish silver. \$42.50. Call AL 2-1229.

Wanted--To buy or rent good used work car. Call RE 9-9363.

For Sale--Two tickets for the East-West football game, Saturday, December 31. Call Clyde Allen, CH 8-1041.